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ABSTRACT

The main text of this report consists of a review and evaluation of job enrichment as an approach to job redesign, with implications for Air Force research and application. In addition, two appendixes are included: the first, a supplemental historical discussion; the second, a ninety-six-item annotated bibliography. Specific objectives are to provide (1) a general review and evaluation of job enrichment and its related motivational concepts, (2) an assessment of the utility of job enrichment to the Air Force in terms of implications for job-redesign research and application, and (3) a comprehensive annotated bibliography of job-enrichment and related literature. The report is intended to be useful to anyone, within or outside the Air Force, who is interested in evaluating job enrichment as an organizational change technique. Job enrichment is discussed within the historical framework of changing managerial assumptions about the worker and work motivation and within the motivational framework of Maslow, McGregor, and Herzberg. The technique of job enrichment is reviewed, evaluated, and compared with other job-redesign interventions. Its limitations are discussed with special emphasis on individual and cultural differences, and a more eclectic approach to job redesign is advocated. Recent advances in job-redesign theory and research, by Hackman, Oldham, and Umstot are presented and implications for Air Force research and applied programs are discussed. (Author)

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JOB ENRICHMENT:
EVALUATION WITH IMPLICATIONS FOR AIR FORCE JOB REDESIGN

By

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OCCUPATION AND MANPOWER RESEARCH DIVISION
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October 1977
Interim Report for Period 1 January 1975 – 30 April 1977

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The main text of this report consists of a review and evaluation of job enrichment as an approach to job redesign, with implications for Air Force research and application. In addition, two appendices are included: the first, a supplemental historical discussion; the second, an annotated bibliography. Specific objectives are to provide: (a) a general review and evaluation of job enrichment and its related motivational concepts, (b) an assessment of the utility of job enrichment to the Air Force in terms of implications for job-redesign research and application, and (c) a comprehensive annotated bibliography of job-enrichment and related literature. The report should prove useful to anyone, within or outside the Air Force, who is interested in evaluating job enrichment as an organizational-change technique. Job enrichment is discussed within the historical framework of changing managerial assumptions about

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PREFACE

The Occupation and Manpower Research Division of the Air Force Human Resources Laboratory, Brooks AFB, Texas, has been involved in a systematic program of job satisfaction research for several years. (Gould, 1976; Gould & Christal, 1976; Tuttle, Gould, & Hazel, 1975; Tuttle & Hazel, 1974). The current report is an outgrowth of this interest in job-satisfaction research in the Air Force. The objectives of the overall job-satisfaction research program have been previously summarized by Tuttle, Gould, and Hazel (1975) as follows: (a) to identify the important facets of job satisfaction, (b) to examine relationships between job satisfaction and career decisions, (c) to identify characteristics of jobs and assignments which produce satisfaction and dissatisfaction, and (d) to make recommendations for job and policy changes which will positively influence satisfaction with Air Force jobs.

The Occupation and Manpower Research Division has not, as yet, embarked on a program which pertains specifically to job-enrichment research or application. This report represents an initial attempt to evaluate whether or not such a program should be undertaken, either as an integral part of our ongoing job satisfaction research program, or as an adjunct to it. An interest in evaluating the utility of job enrichment as an approach to job redesign is in keeping with the third and fourth objectives of our job-satisfaction program, and an assessment of the underlying motivational constructs is in phase with the first objective.

This research was conducted under project 7734. Development of Methods for Describing, Evaluating, and Structuring Air Force Occupations. It was begun under work unit 77340501, Impact of Work Related Factors on Job Satisfaction and Career Decisions, and completed under work unit 77340505, Development of Methodologies for Identifying Career-Ladder-Specific Job-Satisfaction Problems.

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This report contains a main text and two appendices. The main text was written by the first author and consists of a review and evaluation of job enrichment as an approach to job redesign, with implications for Air Force research and application. Appendix A, also written by the first author, provides an extended historical discussion of the evolution of job enrichment within the context of changing managerial assumptions about the worker and work motivation. It is intended to supplement the abbreviated coverage of this topic in the text. Appendix B, prepared by the second author, provides an extensive annotated bibliography of job-enrichment and related literature.

The views expressed in this report are solely those of the authors and do not necessarily reflect the views of the Occupation and Manpower Research Division, the United States Air Force, or the Department of Defense.

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JOB ENRICHMENT: EVALUATION WITH IMPLICATIONS FOR AIR FORCE JOB REDESIGN

I. INTRODUCTION: PURPOSE AND SCOPE

This report is divided into three major parts. The main text consists of a general historical review and evaluation of job enrichment as an approach to job redesign, with implications for Air Force research and application. Appendix A and Appendix B provide respectively: (a) an extended historical discussion to supplement the abbreviated coverage of this topic in the text, and (b) an annotated bibliography of the literature concerned with job enrichment and related topics.

As a whole, this report is intended to assist those concerned with personnel research and management in understanding job enrichment, and to provide a resource for those interested in studying the literature further. In order to serve as an effective resource for readers with diverse backgrounds and varying degrees of exposure to the subject, coverage of the various topics discussed is often quite detailed. In addition to serving as a basic resource, the report represents an initial attempt to determine the potential utility, if any, of job enrichment to the Air Force, and to define what role, if any, the Occupation and Manpower Research Division might play in its further assessment and application in the Air Force. Although the report is specifically intended for Air Force researchers and managers, it should prove useful to others interested in evaluating job enrichment as an organizational-change technique since focus is primarily on job enrichment as applied and evaluated in industry.

With this report, the Occupation and Manpower Research Division is evaluating job enrichment and other approaches to job redesign. Elsewhere in the Air Force, interest has been expressed in this topic. For example, Manley (Note 1) developed an "Air Force Supervisor's Guide to Job Enrichment;" an Orthodox Job Enrichment Program was initiated in 1973 by the Ogden Air Logistics Center (Herzberg & Rafalko, 1975; Herzberg & Zautra, 1976; Rafalko, 1976; Ogden Air Logistics Center, Note 2); and Human Resources Development personnel, in conjunction with the Leadership and Management Division, have intervened to enrich the jobs of security police personnel (Note 3). Also, the Leadership and Management Development Center of Air University has been tasked as the primary applications agency for job enrichment and other organizational-development activities (Note 3). In addition, Umstot (1975) examined job enrichment in combination with goal-setting.

The recent Air Force interest in and preliminary attempts to apply job enrichment make it particularly important that the concept be evaluated and a determination made as to how best to proceed with future interventions. Also, emphasis has been primarily on pragmatic, applied programs. These programs, and similar future efforts, could profit from the establishment of a systematic, longitudinal, research-based framework for evaluation and refinement of the interventions.

Although frequent attempts have been made to evaluate job enrichment, considerable controversy clouds the issue since this approach to job redesign has been alternately hailed as a panacea for organizational ills and maligned as a passing fad of behavioral scientists turned management consultants. This report is designed to provide a more realistic assessment of the potential value of job enrichment and to suggest the extent to which the Occupation and Manpower Research Division might assist in providing a much needed research foundation for such programs, as an integral part of, or an adjunct to, our ongoing satisfaction research program.

Job enrichment is not an easy concept to explain, especially if all the controversy surrounding the issue is to be fully captured. Also, although a relatively recent intervention, it represents an industrial counterrevolution; thus, its evolution could easily be traced as far back as the beginning of the industrial revolution. In addition, job enrichment represents an *in vivo* application of motivational constructs, especially as they relate to job satisfaction and productivity. Thus, job enrichment cannot be adequately reviewed and evaluated without also discussing these very closely related issues. As a result, the text, in combination with Appendix A, is a rather detailed commentary on the evolution, meaning, research, and application of job enrichment and its related motivational constructs. The text also includes suggestions for going beyond the limitations of traditional job enrichment to a more flexible, broader, concept of job redesign.

Job enrichment is closely aligned with the concepts of job satisfaction and work motivation. In the Occupation and Manpower Research

Division, job satisfaction research has been actively pursued for several years. A recent review by Tuttle and Hazel (1974) provides extensive coverage of work-motivation and job-satisfaction theories, and implications for Air Force research. Although some of the same issues will be discussed in this report, the intent is to complement, rather than duplicate, the Tuttle and Hazel (1974) report. For this reason, the reader is encouraged to read their review in tandem with this report, as well as the recent summary of the Air Force job satisfaction program (Gould, 1976) in order to gain full appreciation of these interrelated topics. The reader is further encouraged to read Tuttle, Gould, and Hazel (1975) for an understanding of the development of the Air Force Occupational Attitude Inventory (OAI), a highly reliable and valid device for measuring the dimensions of job satisfaction. The OAI will probably prove very useful in determining where in the Air Force job enrichment might be implemented, in defining the parameters of such an intervention, and for assessing the success of such interventions, at least in terms of job satisfaction.

This review does not attempt to comment critically or specifically on each of the several job-enrichment interventions which have been implemented. It is recommended that readers interested in such a review consult the chapter on job design in Katzell, Yankelovich et al. (1975, chap. VI) or the excellent dissertation by Umstot (1975). Srivastva and his associates (Srivastva, Salipante, Cummings, Notz, Bigelow, Waters et al., 1975, chap. 3) have also provided a comprehensive review of innovative job-redesign experiments, many of which are in the job-enrichment domain.

Other resources might also be of assistance to readers interested in delving further into job enrichment and related topics. Recommended is a review of research pertaining to organizational effectiveness by Campbell, Bownas, Peterson, and Dunnette (1974), a recent text on motivation and work behavior by Steers and Porter (1975), and a comprehensive handbook of organizational psychology by Dunnette (1976).

II. HISTORICAL PERSPECTIVE: CHANGING MANAGERIAL ASSUMPTIONS

Introduction

This brief historical perspective is a condensation of Appendix A. This section is intended for readers who already have a relatively good understanding of the factors which contributed to the drift away from job simplification toward job enrichment and who need only a brief summary to refresh their memories. For the unfamiliar reader who could profit from a more complete account, Appendix A is recommended.

Managerial assumptions about the worker and work motivation have undergone considerable change during the past century and the evolution of job enrichment can be best understood within the context of these assumptions. These changing assumptions will be described using the worker-classification nomenclature (rational-economic, social, self-actualizing) presented by Schein (1970), variations of which have also been used by other commentators.

The Pre-Enrichment Era: Rational-Economic and Social Assumptions

The Rational-Economic Worker. With the advent of the industrial revolution and later, mass production and assembly-line techniques, work rationalization (simplification) became the primary method used by management to increase productivity. Jobs were simplified in the interests of efficient production, worker attitudes were almost totally ignored, and money was considered one of the few effective motivators.

The managerial attitudes which fostered such an approach were effectively summarized by McGregor (1957, 1960) in terms of his Theory X (in contrast to Theory Y) assumptions. Type X managers believed that the worker neither wanted to work nor to assume much responsibility; thus, his or her work might as well be as simple as possible in the interest of efficient production. The idea that workers might derive satisfaction from the work itself was given little consideration and it was assumed that money could be used to motivate workers to do almost anything.

Traditional assumptions lead to job simplification, the first popular approach to job redesign. This fragmenting of work into easy-to-complete, repetitive, isolated and time-efficient tasks under strict supervision and control found its most ardent advocate in Taylor (1911/1947).

Although the attitudes and most of the needs of workers were ignored, job simplification did work for a time and produced gains in productivity. Eventually, however, it had a negative impact in terms of worker alienation and subsequent decreased productivity. Alienation was usually expressed in subtle ways, but occasionally workers became quite militant. Unions were formed and an inimical relationship developed between management and labor.

Management, as well as the worker, suffered. Management suffered in terms of the following effects of alienation: absenteeism, turnover, poor-quality workmanship, occasional sabotage, strikes, drug abuse, and the ever-increasing costs of meeting demands for more pay and fringe benefits. Despite ever-increasing extrinsic motivators (i.e., pay and benefits) workers remained basically dissatisfied with their jobs and alienated from their organizations. Tangible gains to management through job simplification were being offset by losses resulting from absenteeism, turnover, and poor product quality. Extrinsic motivators were not having the desired effect.

The Social Worker. Gradually, some industrial psychologists and sociologists began to focus on the motives and behavior patterns of workers, and new assumptions began to emerge. Satisfaction and productivity were found to be susceptible to the influence of changes in the pattern of social interaction within organizations.

The Hawthorne studies by Mayo and his associates, first reported by Roethlisberger and Dickson, (1939), are generally cited as providing impetus for this transition. Later research, especially with automobile assembly-line workers (Chinoy, 1955; Jasinski, 1956; Walker & Guest, 1952) and other manufacturing-plant workers (Zaleznik, Christensen, & Roethlisberger, 1958), further suggested the impact of opportunities for social interaction on satisfaction and productivity. Meanwhile, evidence was mounting against job simplification. Many investigators were reporting lower levels of job satisfaction among workers performing small and repetitive tasks (Blauner, 1964; Friedman, 1961, Shepard, 1969, 1970, 1971; Walker, 1950; Walker & Guest, 1952).

As a result of the interest in human relations and the concern about the negative side-effects of job simplification, the perception of workers as social beings underwent expansion and modification over the years. Likert (1961, 1967) can perhaps be credited with having contributed most to the development of the Social concept; however, it would be misleading to fit Likert's perspective exclusively into this category.

The transition from rational-economic to social assumptions had an impact upon organizational policies and practices. Although productivity remained the most important concern of management, the techniques used to foster it began to change. In addition to pay and fringe benefits, secondary social reinforcement was included among the extrinsic factors used to motivate workers. It was believed that by redesigning jobs to provide increased opportunities for co-worker interaction and improved supervisor-subordinate relationship, social needs would be met and satisfaction and productivity would be improved. The needs, attitudes, and perceptions of workers had finally become important concerns of management.

The Enrichment Era: Theories of Self-Actualization

Managers became increasingly disillusioned with the extrinsic motivators they had been using to foster productivity. Eventually they discovered that even the extrinsic social reinforcers were not having the impact they desired.

The current interest in job enrichment can be attributed to acceptance of assumptions which represent both a reaction against rational-economic assumptions and an extension of the social concept. These assumptions are usually described in terms of self-actualization through meaningful work. Meaningful work, it was assumed, could provide intrinsic reinforcement based on qualities inherent in the work itself, thus diminishing management's reliance on extrinsic reinforcement and fostering worker satisfaction and productivity.

Maslow's Hierarchy-of-Needs Theory. Maslow (1943, 1968, 1970) can be credited with having been the first to foster an interest in self-actualization among persons influential in industry. He postulated a hierarchy-of-needs theory of motivation, emphasizing, in ascending order, the following needs: physiological, safety and security, belongingness and love, esteem, and self-actualization. According to this theory, needs are ordered according to the importance to the individual under any given conditions. Given environmental conditions conducive to satisfying the lower-order needs, the theory postulates that the higher order needs will naturally emerge. Once higher-order needs become dominant, the lower-order needs cease being effective motivators as long as they continue to be satiated.

McGregor's Theory Y. McGregor (1957, 1960) did much to introduce Maslow's motivational concepts to managers by developing new assumptions about the nature of the worker and work motivation. This new perspective, labeled Theory Y, is in distinct contrast to Theory X mentioned earlier. McGregor's Theory Y assumptions strongly reflected Maslow's viewpoint.

Herzberg's Two-Factor (Motivator-Hygiene) Theory. Herzberg and his associates (Herzberg, 1964, 1966, 1968; Herzberg, Mausner, & Snyderman, 1959) can probably be credited with having contributed most to the popularity of the self-actualizing concept in industry and to the eventual implementation of job enrichment. Herzberg and his associates were influenced by Maslow, but they developed their own two-factor (motivator-hygiene) theory of job satisfaction and motivation, based on research in an industrial setting.

Herzberg and his associates challenged the assumption that satisfaction and dissatisfaction are bipolar extremes along the same continuum. They argued that two distinctly different need categories are being isolated. One relates to the context, and the other to the content, of the work situation. Needs in the former category are considered dissatisfaction-avoidance needs which require the presence of certain hygiene factors for satisfaction; these needs include concerns such as policies, pay, and social relations. Needs in the latter category are considered growth-producing needs and are termed motivators. Motivators are emphasized since only they are assumed to contribute greatly to job satisfaction. Arranged in approximate order of importance, these motivators are: achievement, recognition, work itself, responsibility, advancement, and growth.

Like Maslow, Herzberg emphasized motivation through personal growth or self-actualization. Herzberg specifically defined this process in terms of work content factors, clarifying its applicability to the workplace. He also provided some empirical support for his version of the self-actualization concept.

It is not difficult to understand the appeal of Herzberg's theory to managers. Like Maslow's theory, his theory can explain the transition from rational-economic to social assumptions, while going beyond both. However, unlike Maslow's, his theory applies specifically to the workplace and is more specific than McGregor's Theory Y in providing implications for job intervention. Above all, it is a relatively simple theory which can allegedly be applied to all workers.

Maslow, McGregor, and Herzberg had a considerable impact on management. The emphasis on the worker as a social being was gradually replaced by an emphasis on the worker's need for self-actualization. It was believed that by making work more intrinsically meaningful, alienation would be diminished and satisfaction and productivity would be increased. Also, managers would not have to rely as heavily on expensive and often ineffective extrinsic motivators.

Managerial assumptions had undergone another transition from social to self-actualizing assumptions, and the theoretical foundation for job enrichment was established.

III. JOB REDESIGN: FROM SIMPLIFICATION TO ENRICHMENT

Introduction

Job enrichment is a popular and relatively new approach to job redesign based on the principles of self-actualization first developed by Maslow (1943, 1968, 1970) and later popularized in industry by McGregor (1960) and Herzberg et al. (1959). Thus this particular form of job-redesign intervention has been used in industry for almost two decades. However, since it so closely resembles certain forms of job enlargement, it could be argued that its origins go back to an even earlier period.

Job enrichment represents, in part, a counter-reaction by some managers and behavioral scientists in industry against the alleged dehumanizing and counterproductive effects of job simplification on the worker. This is not to say that job simplification is no longer popular. It remains a highly regarded job-redesign technique among certain persons influential to management, especially industrial engineers, and is still frequently implemented. For example, General Motors recently completed a new automobile-manufacturing facility capable of passing .01.6 cars by each worker in an hour (see introductory comments accompanying Kahn, 1973). However, a gradual transition away from an emphasis on job simplification has occurred, and today, job enrichment appears to be the more popular of these two job-redesign techniques. This transition is consistent with the changes in managerial assumptions and the concomitant increase in the influence of behavioral scientists in industry.

The transition was not abrupt. Through the years, job-redesign interventions other than either simplification or enrichment, were implemented in the hope of increasing satisfaction and productivity.

One of the most popular of these interventions, job enlargements, has already been mentioned. Historically, job enlargement served as a direct precursor to job enrichment. The term "job enlargement" was first applied to job redesign by Walker (see Guest, 1955) and was first implemented during the late 1940's and early 1950's at IBM (Walker, 1950; see also Gifford, 1972). Davis and his associates (Davis, 1956, 1957; Davis &

Canter, 1956; Davis, Canter, & Hoffman, 1955) were also pioneers in their advocacy of a search for alternative approaches in job redesign other than job simplification.

Job enlargement was not the only popular alternative to job simplification. Job rotation and job extention also became popular. The use and exact meaning of job-redesign terms vary from one author to another and it is often difficult to understand the similarities and differences between them. In recent years, the problem is magnified due to a proliferation of such terms. The following terms are frequently found in the job-redesign literature: job design, job redesign, job change, job reengineering, job restructuring, job simplification, job rationalization, job expansion, job rotation, job enlargement (with subcategories horizontal and vertical job enlargement), and job enrichment.

In order to clarify the similarities and differences between these terms, they are defined and discussed below. The attempt is made to capture the various shades of meaning, to indicate overlap, and to develop operational definitions. Once the terms are defined and the concept of job enrichment is presented, the interrelation of these several terms is summarized using set theory.

Definitions of General Concepts

Job Design. Job Design refers to the purposeful planning of the entire scope of a job including all relevant job content and context factors. This term usually denotes the initial design of jobs or the relatively stable yet somewhat evolving characteristics of ongoing jobs not subject to specific intervention. For such intentional intervention, job redesign is the preferred generic term, although job design is sometimes used interchangeably with job redesign and even with more specific subcategories such as job enlargement or job enrichment. This term is often used in reference to factors such as overall organizational climate, design of tools and equipment, organizational goal structure, and social-climate factors such as supervisor-subordinate relationships, workgroup cooperation and worker participation in management. Because of its extremely generic nature, it is often difficult to decipher its context-specific meaning.

Job Redesign. Job redesign is synonymous with the terms job change, job restructuring, and job reengineering. This term implies the purposeful revision of an already existing task, job or group of jobs within an organization with the ultimate goal of improving productivity. Sometimes satisfaction and motivation are also important concerns. Job redesign is often used interchangeably with its specific subcategories ranging from job simplification to job enrichment. When the term "job redesign" is used, it is important to clarify just what type of job redesign is actually involved.

Definitions of Specific Job-Redesign Interventions

Job Simplification. This term, sometimes referred to as job rationalization, refers to the intentional breaking down of a job into easy-to-complete, repetitive, isolated, time-efficient tasks under strict supervision and control in order to increase productivity. The intrinsic motivational properties of the work itself are of little concern and the satisfaction of the worker is generally disregarded. Emphasis is on making the worker and the workplace as efficient as possible.

Job Rotation. This specific job-redesign intervention is also a subcategory of job expansion or job enlargement and could conceivably be part of an enrichment intervention as well. However, job rotation usually involves less concern with meeting needs for self-actualization than is characteristic of expansion, enlargement or enrichment. This term refers to the practice of intentionally enlarging a job by allowing a worker to periodically perform different tasks or jobs, thus increasing variety and skill diversity. Job satisfaction, and especially productivity, are of concern and the practice reflects some interest in increasing the intrinsically motivating properties of the job. The approach used can usually be distinguished from other attempts to increase task variety or skill level by the relatively long time cycle between task changes and the successive rather than simultaneous performance of the tasks involved.

Job Expansion. Another subcategory of job redesign, this term can also be considered a subset of job enlargement with which it is sometimes used interchangeably. The exact distinction between job expansion and horizontal job enlargement is unclear but job enlargement appears to be the preferred term. Similar to horizontal job enlargement, job expansion primarily involves an increase in the number of tasks performed rather than an increase in responsibility, complexity or difficulty, as would be characteristic of vertical enlargement. It usually involves more emphasis on job variety, personal responsibility, and psychological growth than job rotation but less emphasis on these factors than is characteristic of vertical enlargement or enrichment.

Job Enlargement. Job enlargement is usually broken down into two subcategories: horizontal job enlargement and vertical job enlargement. The exact distinction between these two categories is unclear and some overlap probably exists, although Herzberg (1968) considers them mutually exclusive. Horizontal job enlargement usually refers to an increase in such factors as the number and variety of tasks performed. Vertical job enlargement, on the other hand, usually refers to the degree to which an individual is given increased control over such factors as planning and execution of his work, and is similar to job enrichment.

The best way to differentiate between the two job-enlargement categories is to assess the degree to which a particular job change clearly serves to enhance opportunities for self-actualization. If there is little relation to self-actualization, the change would most likely fall in the category of horizontal job enlargement; if there is a clear relation to self-actualization, the change would most likely fall in the category of vertical job enlargement. For example, if a job is enlarged by giving a worker more or different tasks to do which are just as uninteresting as the tasks he or she used to perform, this could be considered horizontal enlargement (and of dubious motivational value). However, if the worker is given new tasks which are challenging, interesting, and involve development of new skills, the change could be considered vertical job enlargement since opportunities for greater self-fulfillment are provided. Often the degree to which a particular change contributes to self-actualization is difficult to assess, making categorization difficult. Also, the distinction is of doubtful utility, since, as Reif and Luthans (1972) pointed out, distinctions between horizontal and vertical enlargement (and between enlargement and enrichment) are probably more semantic than real. Often horizontal enrichment becomes synonomous with "bad" changes (i.e., inappropriate, unmotivating), while vertical enrichment becomes synonomous with "good" changes (i.e., appropriate, motivating, self-actualizing). Even if emphasis is to be on self-actualization, it is probable that some changes typically classified as horizontal, are, at times, appropriate.

Job Enrichment. Job enrichment, as the subcategory of job redesign with which this report is primarily concerned, can be considered the intentional redesign of a task or job, on a large or small scale, in an attempt to make it more intrinsically motivating and thereby increasing satisfaction and productivity. It represents an *in vivo* application of the principles of Maslow and Herzberg in terms of providing opportunities for self-actualization or psychological growth. Since job enrichment is largely a reaction to unfortunate side-effects often attributed to job simplification, it is usually considered to be an opposite approach. However, it has much in common with other job-redesign interventions and represents an evolution of these techniques in terms of self-actualization.

Job enrichment is most closely associated with vertical job enlargement and has been defined as identical to this term, containing no elements in common with horizontal job enlargement (Herzberg, 1968). It has also been conceived as including both horizontal and vertical elements (Lawler, 1969). In the present report, the latter definition is preferred, especially since the distinction between vertical and horizontal elements is vague.

Figure 1 uses set theory and a modified Venn diagram in an attempt to clarify and summarize the relationship between the various job-design interventions. It illustrates the relationship between job enrichment and other previously discussed interventions. It includes vertical and horizontal self-actualization continua representing the variable emphasis upon this parameter by different horizontal and vertical job-redesign interventions. Thus three important aspects are represented: overlap, self-actualization, and horizontal versus vertical job redesign.

Job design can be considered the universal set representing the overall ongoing and relatively enduring characteristics of the organization, while job redesign is a generic subset of this universal set and represents a number of mutually exclusive or overlapping types of intentional interventions. These specific subsets range from job simplification to job enrichment. Job simplification and job enlargement are shown as mutually exclusive sets, job simplification being the complement of job enlargement. To represent job simplification as an exclusive set with no elements in common with other interventions is perhaps misleading. This point will be developed later. However, to do so reflects the view, commonly found in the literature, that job simplification is apart from, or the opposite of, other approaches to job redesign.

Notice that all subsets other than job simplification are subsets of job enlargement (broadly defined in terms of horizontal and vertical elements), and all intersect or overlap. There is considerable commonality between job enlargement interventions, although the boundaries as drawn are only approximations. Whether they are horizontal or vertical in character, the interventions vary along one important dimension: degree of

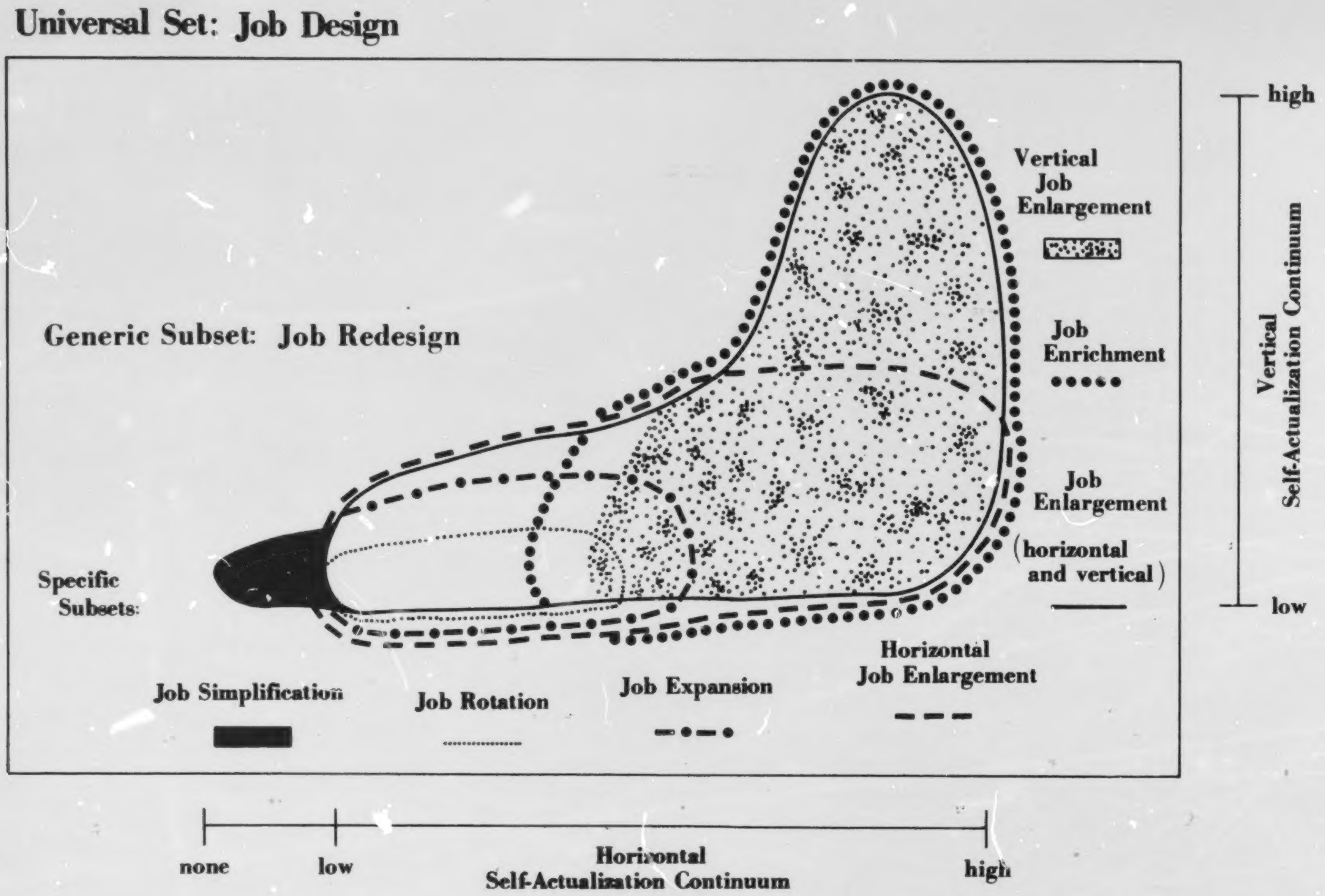

Universal Set: Job Design
Generic Subset: Job Redesign
Specific Subsets:
Vertical Job Enlargement
Job Enrichment
Job Enlargement (horizontal and vertical)
Horizontal Job Enlargement
Job Simplification
Job Rotation
Job Expansion
high
low
Vertical Self-Actualization Continuum
none
low
Horizontal Self-Actualization Continuum
high

Figure 1. Set theory representation of job-design categories with self-actualizing continua.

emphasis on self-actualization. The more they emphasize self-actualization, the more they closely resemble job enrichment.

In Figure 1, job enrichment is defined as broader in scope than vertical job enlargement, in keeping with Lawler (1969), and taking issue with Herzberg (1968). Also contrary to Herzberg (1968), horizontal and vertical job enlargement are not defined as mutually exclusive sets: they are assumed to intersect. Job enrichment is also considered to intersect all of the other job enlargement subsets. In summary, the exact degree of overlap between the various job-redesign subsets is unknown and only suggested in Figure 1.

The terms self-actualization, self-fulfillment, and psychological growth have been used frequently and interchangeably in this report to describe the motivational end product of job enrichment. The terms have been used as synonyms depending on the theorist being discussed. Maslow, for example, prefers self-actualization; Herzberg typically uses terms such as self-fulfillment or psychological growth. As yet, these terms have remained vaguely defined. At this point an attempt will be made to clarify their common meaning. The discussion will be limited to Herzberg's framework since most job-enrichment interventions have been based almost exclusively on Herzberg's motivators and suggested job modification. Later in this report, the framework of other investigators will be presented.

According to Herzberg (1968), there are six motivational subcategories related to satisfaction, self-fulfillment, and psychological growth: achievement, recognition, work itself, responsibility, advancement, and growth. Herzberg does not provide specific, well-defined operational definitions for these terms. However, he does provide several principles of job redesign (specifically, vertical job enlargement or job enrichment) and the motivators upon which they are based. These principles and their motivators, as suggested by Herzberg, are summarized in Table 1 and are as follows:

Table 1. **Representative Job-Enrichment Principles with Associated Motivators**

Principle	Motivator
Worker Accountability	
Molar Work Unit	Responsibility Achievement Recognition
Freedom and Authority	
Direct Feedback	Recognition
Task Diversity and Challenge	Growth
Task Specialization	Responsibility Growth Advancement

1. Remove some managerial or supervisory controls while retaining, and possibly increasing, worker accountability for performance. The motivators involved include responsibility, achievement, and recognition.

2. Allow workers to be involved in a molar unit of work rather than just a molecular part of it, thus allowing psychological "ownership" of the work performed. The motivators involved include responsibility, achievement, and recognition.

3. Give an employee increased freedom on the job and additional authority. The motivators involved include responsibility, achievement, and recognition.

4. Make periodic performance reports available to the worker rather than to the supervisor, thus providing direct feedback to the worker. The motivator involved is recognition.

5. Introduce the worker to new and more difficult tasks which have not been previously handled. The motivator involved is growth.

6. Assign individuals to specific or specialized tasks in order to allow them to become experts.

The motivators involved include responsibility, growth, and advancement.

The list is far from complete and the potential changes are vast. Any intentional intervention which attempts to increase intrinsic motivation (and thereby satisfaction and productivity) by providing opportunities for worker self-actualization in the sense intended by Maslow or Herzberg can be considered job enrichment. The size of the intervention can be very small or very large. At the extreme it could be so large as to involve multiple jobs and the entire organizational climate. However, usually the intervention is on a small-to-moderate scale. In terms of defining an intervention as job enrichment, size is not a critical factor. Instead, the primary criterion is the extent to which it provides, or is intended to provide, opportunities for self-actualization, either in terms of Herzberg's motivators or Maslow's highest-order needs. To be defined as a successful job-enrichment effort, one or more of the following outcomes would be expected: satisfaction and productivity would increase within a reasonable period of time, absenteeism and turnover would be lessened, and product quality would be increased.

The description of the transition from job simplification to job enrichment is now complete. Although both are based on an ultimate concern for productivity, different motivational assumptions lead to different approaches to job redesign. In job simplification, work is rationalized in the interests of making the worker and the workplace as efficient as a machine, while in job enrichment, work efficiency is of secondary importance and worker involvement in the work itself is emphasized. The former approach relies on extrinsic motivation; the latter, on intrinsic motivation. In job simplification worker satisfaction is practically ignored, while in job enrichment the attempt is made to increase satisfaction by bringing meaning and challenge to the work itself. The former approach is based on distrust and contempt for the worker; the latter implies considerable faith in worker capabilities. Table 2 provides a summary of the contrast between these two opposing approaches to job redesign.

Table 2. **Contrast of Job Simplification with Job Enrichment Along Five Dimensions**

	Job-Redesign Interventions	
Characteristics	Job Simplification	Job Enrichment
Primary Motivation	Extrinsic (Pay and Benefits)	Intrinsic (Work Itself)
Job Stimulus Conditions	Simplified Tasks	Moderately Difficult Tasks
	Low-level Skills	High-level Skills
	Task Repetition	Task Variety
	Close Supervision	Limited Supervision
	Limited Control	Increased Autonomy
	Limited Responsibility	Increased Responsibility
Worker Perceptions	Monotony	Challenge
	Under-utilization	Self-fulfillment, Achievement
	Meaninglessness	Meaningfulness
	Low Self-concept	High Self-concept
	Detachment from Work	Psychological "Ownership" of Work
Worker Affective Responses	Boredom, Apathy	Interest, Concern
	Alienation	Involvement
	Job Dissatisfaction	Job Satisfaction
	Incongruence Individual/ Organizational Needs	Congruence Individual/ Organizational Needs
	Disloyalty to Organization	Loyalty to Organization
	Solidary with Peers/Union	Solidary with Peers/Organization
	Powerlessness	Powerfulness
Worker Behavioral Responses	Absenteeism, Turnover	Reduction Absenteeism, Turnover
	Restricted Output	Increased Output
	Poor Product Quality	Improved Product Quality
	Strikes, Sabatoge	Decreased Strikes, Sabatoge
	Labor/Management Disputes	Improved Labor/Management Relations
	Drug/Alcohol Abuse	Reduced Drug/Alcohol Abuse

IV. RESEARCH AND IMPLEMENTATION: FROM THEORY TO PRACTICE

Introduction

Thus far the evolution of job enrichment has been discussed in the context of changing managerial assumptions regarding the worker and work motivation. At this point the focus of the report shifts to an overview of job-enrichment research and actual implementation in industrial settings. For a detailed review of studies evaluating the two-factor theory consult King (1970). For a detailed presentation of the experimental adequacy and success of job-enrichment interventions, see Katzell, Yankelovich et al. (1975, chap. VI); Srivastva et al. (1975, chap 3); or Umstot (1975).

Theoretical Validity

Hierarchy-of-Needs Theory. Maslow (1970) provided little empirical evidence in support of his hierarchy-of-needs theory which is based primarily on existential and humanistic philosophy. It is a difficult theory to verify for the needs are not well-defined or easily measurable. Also, the theory can explain almost any situation. For example, if workers are preoccupied by a concern for pay and fringe benefits, and are not interested in self-actualization as defined by Maslow, this does not challenge the theory; instead it actually supports it. The situation can be explained in terms of conditions not being right to allow expression of the higher-order needs and by the fact that the lower-order needs have not as yet been satiated. If on the other hand, workers express less interest in pay and fringe benefits and derive satisfaction through social interaction, development of self-esteem, or self-actualization, it is because conditions are conducive to the satisfaction of their lower-order needs, allowing higher-order needs to be expressed. Since the theory is practically untestable, little empirical evidence has been amassed in support.

What little evidence does exist, although contradictory, tends to bring into question the adequacy of the need-hierarchy hypothesis. Clark (1960) provided a review of several industrial studies from Maslow's theoretical perspective. He pointed out that the evidence was not conclusively in support of the theory and indicated the need for a direct empirical test. Hunt and Hill (1969) concluded that little evidence exists to link Maslow's model to either performance on the job or to general psychological well-being.

Porter (1962, 1963a, 1963b, 1963c) based a nation-wide survey of managerial attitudes on Maslow's theory and provided data which were generally in support of Maslow's theory. However, the cross-sectional nature of the studies did not provide conclusive support and are open to multiple interpretations.

Hall and Nougaim (1968) conducted a 5-year longitudinal study of telephone company managers, examining changes in nine need categories as they progressed from training status to second- and third-level management positions. No strong relationships were found to support Maslow's hierarchy-of-needs interpretation, or any alternative hierarchical interpretation. An alternative career-stages model was proposed in which changing needs are explained in terms of developing career concerns rather than lower-order-need gratification.

Another alternative model was proposed by Alderfer (1969) which incorporated many of the properties of Maslow's model but modified it in important ways. Alderfer presented and tested a theory of human needs which focused on three core needs (ERG): existence, relatedness, and growth. Although the categories are fewer in number, they closely parallel the need categories proposed by Maslow. Needs are considered to be hierarchically arranged, but the gratification of lower-order needs is not considered a prerequisite for the emergence or satisfaction of higher-order needs. In Alderfer's model, needs are considered along a concreteness continuum with the existence needs considered the most concrete; the growth needs, the most abstract. A frustration-regression hypothesis is also incorporated whereby frustration of more abstract needs is thought to result in a regressive shift in emphasis to the satisfaction of more concrete needs. In an empirical test of the propositions of both theories using 110 bank employees given a group-administered questionnaire, the hypotheses derived from the ERG theory were given significantly greater support than were those derived from Maslow's theory. Although the ERG theory was found to be more robust, Alderfer cautioned that such results were tentative and that further investigation was in order, especially due to the potential influence of experimenter bias.

Taken as a whole, the limited empirical investigations which have been conducted bring into question the adequacy of Maslow's theory. Especially dubious appears to be the emphasis on a strictly ordered need hierarchy.

Two-Factor (Motivator-Hygiene) Theory. Herzberg and his associates (1959) used job satisfaction research as a basis for early theory development. Later, Herzberg (1966) cited several cross-cultural studies which, he claimed, confirmed his two-factor theory. Ten of these studies (which include his own 1959 effort) used the experimenter-scored critical-incident technique; only a few used other methods. With regard to the critical-incident studies, he reported that his motivational hypothesis was confirmed in all of 51 significant comparisons; 54 of 57 significant differences were in the direction predicted by his hygiene theory.

The evidence is not as unequivocal as the Herzberg review might suggest. In 39 studies reviewed by Kaplan, Tausky, and Bolaria (1969), 21 or 54% supported Herzberg's theory. Of these, 18 used Herzberg's experimenter-coded critical-incident technique; only three studies used more conventional, respondent-scored techniques. The remaining 15 subject-coded studies disconfirmed his hypothesis.

To speak of a single theoretical hypothesis is perhaps an over-simplification. King (1970) suggested that a major cause of the controversy pertaining to the Herzberg theory is its lack of an explicity stated theoretical position. In attempting to derive one, King discovered that the literature made reference to five distinct micro-hypotheses formulated either by Herzberg or other researchers. The King data suggested that confirmation or disconfirmation of the two-factor theory is largely contingent upon the method used and the micro-theory being explicitly or implicitly addressed. As with Kaplan et al. (1969), King found that the experimenter-coded studies tended to confirm the theory; the subject-coded studies usually did not.

Vroom (1964) suggested that the results of studies using the critical-incident method might stem from a need on the part of the respondent to distort (however unintentionally) recall of events associated with sources of satisfaction and dissatisfaction. It is easy to attribute satisfaction to personal achievement, but it is difficult to attribute dissatisfaction to the absence of such a factor. Rather, it is easier to attribute dissatisfaction to company-imposed obstacles than to personal deficiencies.

Based on a reassessment of the studies cited by Herzberg (1966), and a review of 31 additional studies which used methods other than Herzberg's critical-incident technique, House and Wigdor (1967) concluded that the motivator-hygiene dichotomy was not well-supported. They pointed out that achievement and recognition in the studies cited by Herzberg (1966) were identified as dissatisfiers more often than, for example, working conditions or relations with supervisors. Based on their review of studies which did not use the critical-incident method, House and Wigdor concluded: (a) factors contributing to job satisfaction for one person can contribute to job dissatisfaction for another, (b) a given factor can cause job satisfaction and dissatisfaction in the same sample, and (c) factors intrinsic to the work itself can contribute to both satisfaction and dissatisfaction.

Tuttle and Hazel (1974) were also critical of the two-factor theory. They concluded that it was neither sufficiently comprehensive nor explicit and that it failed to allow for differences in individual responses to situational characteristics. In fact, based on a recent survey of the literature conducted in conjunction with the development of the Air Force's Occupational Attitude Inventory (OAI), Tuttle, Gould, and Hazel (1975) refuted the Herzberg notion of a bivariate satisfaction dimension. They concluded that although satisfaction is multidimensional, it can be best represented along a single continuum with satisfaction and dissatisfaction representing the polar extremes.

Some reviewers have defended the two-factor theory against the considerable criticism directed toward it. For example, Whitsett and Winslow (1967) argued that the theory has been misunderstood and the experimental evidence often misinterpreted, but that as a group, the studies critical of the theory offer little empirical evidence for doubting its validity.

Nonetheless, the overwhelming evidence appears to suggest that the theory is inadequate. It is methodologically bound, based on research of questionable validity, and inconsistent with the bulk of evidence from other studies. In short, the two-factor theory represents an oversimplification of job satisfaction/dissatisfaction and of the relationship between these factors and motivation.

Adequacy of Actual Job-Enrichment Interventions

Empirical evidence is often sparse, and this section focuses only on those studies in which a concern for experimental assessment was demonstrated. The intent is to provide a general review and brief evaluation of the experimental and quasi-experimental work which has been done.

Of the many job-enrichment interventions which have been reported in the literature, one characteristic stands out: the primary intent of most job-enrichment interventions is to improve an ongoing work situation rather than to answer specific scientific questions. As a result of this pragmatic approach, such interventions have often been deficient from an experimental point of view, with little or no attention being given to experimental design. Such pragmatism has also resulted in emphasis on short-term effects with insufficient concern for longitudinal assessment.

Experimental Criteria for Evaluating Job-Enrichment Interventions. This topic is included mainly for the benefit of readers who have had little or no exposure to experimental design. Readers who are already familiar with such concerns might wish to proceed to the discussion of job-enrichment research based on the Katzell et al. review on page 19.

In order to evaluate job-enrichment interventions from an experimental perspective, it is important to determine what criteria to use for such evaluation. The most important concern is experimental validity. Toward this end, the relevant variables need to be identified, operationally defined, effectively controlled, and accurately measured. Four types of variables and two types of validity are defined and discussed in this section. Validity is sometimes further subdivided, but a discussion of internal and external validity should provide the reader with a basic understanding of the concept. The variable categories, although exhaustive, are sometimes defined in somewhat different terms, or further divided or combined, by different researchers; however, the variable categories presented represent the most common nomenclature used.

Experimental Variables

Independent Variables Independent variables are the specific and intentional changes made in the job. In job-enrichment interventions, they are primarily job-content changes. However, some job-context changes such as increased opportunities for growth are also legitimate job-enrichment independent variables.

Confounding Variables. A clear distinction can be made between independent and confounding variables. The independent variables are the legitimate and intentionally manipulated job changes. Confounding variables are any other changes, usually unintentional, which might be simultaneously occurring on the job. Since these other changes might impact upon experimental outcomes (i.e., the dependent variables), they can obscure the contribution of the independent variables and should be held constant unless they are redefined as independent variables and intentionally included in the experimental design. In the job- enrichment situation, most job-context changes are confounding variables since they fall outside the domain of job enrichment. They would be legitimate independent variables only in redesign efforts larger in scope than job enrichment.

Dependent Variables. Dependent variables, often called criterion variables, are the experimental outcomes or results. Predictions are usually made that a given set of job changes (independent variables) will have some impact upon some set of factors (dependent variables). These factors are usually job satisfaction (attitudinal variables) or productivity (performance variables). Since productivity is often difficult to measure, job tenure, absenteeism, and accident rates are often used as indirect productivity criteria. Dependent variables, like independent variables, should be carefully identified prior to implementation of a job-enrichment intervention and some clearly operationally defined success criterion established. Baseline data (regarding these variables) need to be accurately measured before implementation and then compared with measured changes in the dependent variables taken longitudinally in time-one time-two comparisons. Thus changes in the dependent variables contingent upon the experimental manipulations can be assessed. Often the variables involved are ill-defined and inaccurately measured. For example, it is often not clear just what the results of an intervention are, when "measurement" consists of merely an intuitive assessment on the part of a supervisor.

Intervening Variables. Another group of variables, usually called intervening variables, mediate the relationship between the independent and dependent variables. They can generally be defined in terms of individual and cultural differences such as personality, motives, experiences, aptitudes, perceptions, socio-economic status, urban/rural origin, race, and sex. They can also be defined in terms of historical variables such as occupational turmoil due to economic fluctuations. Not all such variables need to be identified prior to experimentation, but investigators should be aware of the potential variance introduced by such factors when designing experiments, selecting and assigning subjects, and analyzing and interpreting results. Intervening variables have typically been ignored in job-enrichment interventions. The interrelationship of these categories of experimental variables is summarized in Figure 2.

Alternative Approaches to Variable Definition. The preceding discussion of variable types was based on a relatively common conceptualization. Researchers, however, typically take the liberty of defining variables according to their own frame of reference. Thus, on occasion, different terms are encountered, or the common terms are defined in a broader or more restrictive fashion.

Katzell, Yankelovich et al. (1975, chaps. V & VI), in developing criteria for evaluating job-redesign research, used the following terms: "take-, moderating-, and mediating-variables." (In most instances, these terms can be considered to represent types of intervening variables, as defined previously.) Take variables are defined as measures of differences in the experience or perception of jobs by either incumbents or observers. Moderator (or situational) variables are defined as aspects of the internal or external environment in which the other variables exist; such as, characteristics of workers, the technology, or the socio-political-economic milieu. Mediating (or intervening) variables are defined in terms of the processes which link the independent or take variables to the dependent variables. Thus far, the definition is much the same as the intervening variable definition provided previously. However, Katzell, Yankelovich et al. (1975) define their mediating variables in a more restrictive sense by referring specifically to considerations of worker capability and motivation.

Ward (Note 4) provided another alternative frame of reference for organizational researchers. He divided the organizational universe into two broad categories: person characteristics and job properties from which independent and dependent variables can be generated. The independent variables are further classified as either manipulable or nonmanipulable. However, except for the constraints imposed by the perceptual limitations of the researcher, organizational tradition, or technology, even most nonmanipulable independent variables can hypothetically be manipulated. Some variables can be intentionally left unchanged and are analogous to confounding variables (although Ward has expressed concern over the use of this term since confounding variables can serve to clarify rather than obscure relationships once put into a predictor system). Manipulable person characteristics can generally be modified through training, while manipulable job properties can generally be modified through job redesign or other organizational-change techniques.

In summary, both manipulable and nonmanipulable independent variables can be derived from personal characteristics and job properties. The manipulable variables, in the context of the nonmanipulable variables can be used to elicit (predict) satisfaction/productivity outcomes (dependent variables). Both intervening and confounding variables (as defined in the preceding discussion) can be considered subsets of the independent-variable category within this frame of reference.

Experimental Validity

External Validity. External validity refers to the extent to which results can be generalized effectively from one situation to another. It is usually dependent upon the size and nature of the data sample and represents the extent to which the study results are generalizable to some well-defined population. For example, cross-cultural studies or the use of large and heterogeneous subject populations reflect a concern for external validity.

Internal Validity. Perhaps the most critical criterion upon which to base the experimental adequacy of a job-enrichment intervention is its internal validity. Internal validity represents a concern for the soundness of the results. The experimental outcomes may be accurate reflections of reality or they may be due to chance, measurement error, or factors other than those under investigation. In order to insure a high degree of internal validity, variables need to be operationally defined and carefully measured.

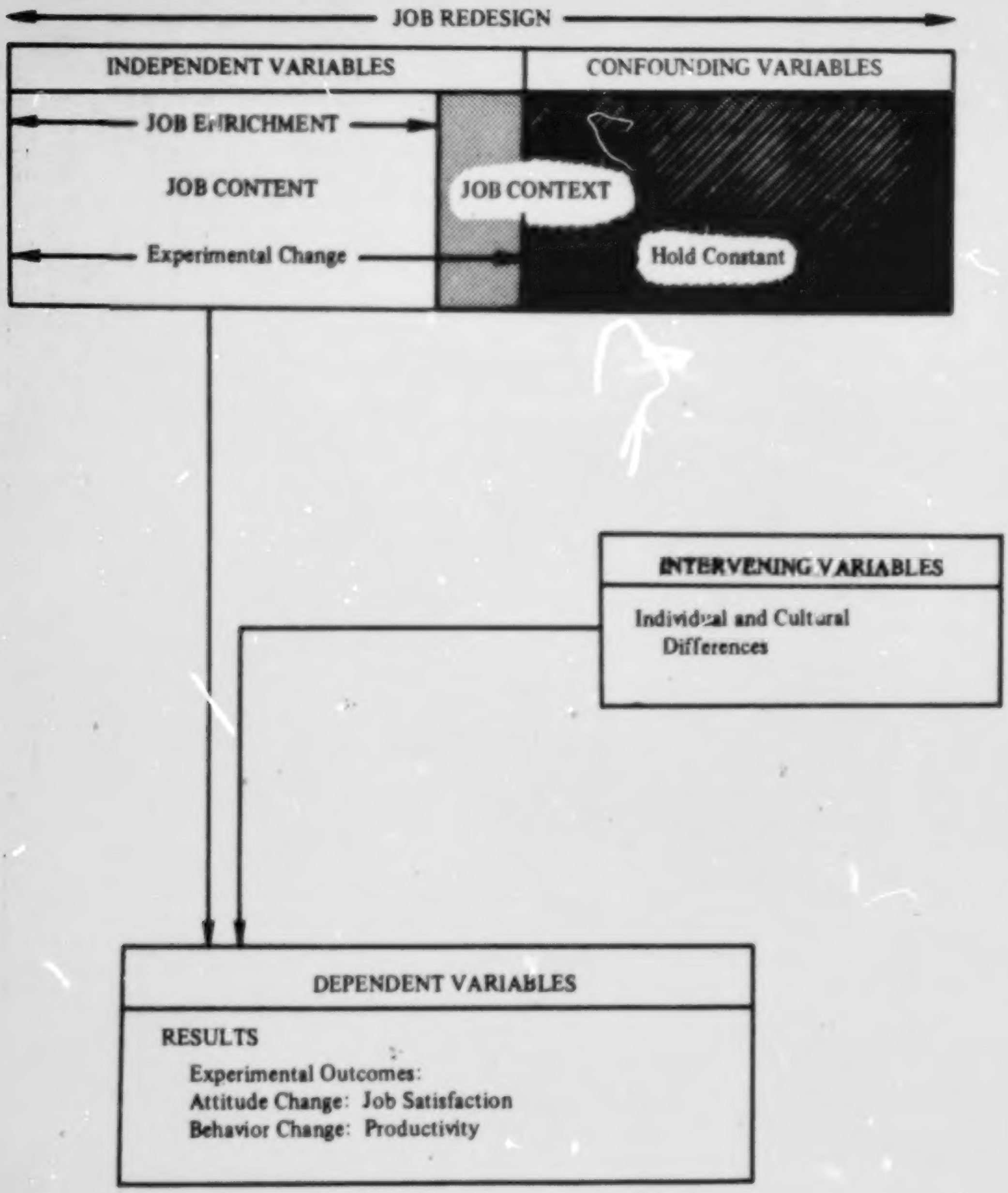

JOB REDESIGN
INDEPENDENT VARIABLES
CONFOUNDING VARIABLES
JOB ENRICHMENT
JOB CONTENT
JOB CONTEXT
Experimental Change
Hold Constant
INTERVENING VARIABLES
Individual and Cultural Differences
DEPENDENT VARIABLES
RESULTS
Experimental Outcomes:
Attitude Change: Job Satisfaction
Behavior Change: Productivity

Figure 2. The interrelationship of experimental variables.

Other steps should also be taken. For example, sample size should be reasonably large, control groups and tests of significance of differences should be used, measurement of results should be longitudinal, and the relative contribution of the independent variables (distinct from any confounding factors) should be isolated. When job enrichment is specifically under investigation, confounding variables might include: efficiency of work methods, changes or redesign of equipment, pay increases, organizational-climate or management-system changes, worker participation, training, and recruitment or selection practices. To define these variables as falling outside of the enrichment domain is not to suggest that they are unimportant. Rather, it is suggested that they be held constant, at least temporarily, until the impact of variables within the job-enrichment domain are assessed.

Summary of Job-Enrichment Research Based on Katzell Review. Although the review by Katzell, Yankelovich and their associates is used as the source of material summarized here, other investigators, such as Srivastva et al. (1975, chap. 3) and Umstot (1975), have also provided in-depth reviews of job enrichment and job redesign research.

Katzell, Yankelovich et al. (1975, chaps. V & VI) established criteria to evaluate the job-redesign literature they reviewed. No studies were found which adequately met all of their criteria. Katzell and his associates were interested in the broad topic of job design, and the studies they reviewed reflect this broad interest. Correlational- as well as job-intervention studies were reviewed. The correlational studies typically concerned job-satisfaction/work-motivation research, with implications for job redesign. The intervention studies could be categorized more specifically as job-enrichment research. Of the dozens of studies they reviewed, only 14 were considered sufficiently well-executed to be prototypes: five correlational studies and nine job-intervention studies. Prototypic studies reflected adequate design and execution, but not necessarily positive results.

The following correlational studies were considered prototypes: (a) Herzberg, Mausner, and Snyderman (1959), (b) Turner and Lawrence (1965), (c) Patchen (1970), (d) Hall and Lawler (1970), and (e) Hackman and Lawler (1971).

The results of these studies, taken as a whole, suggested that certain job-redesign characteristics are correlated with higher job satisfaction, especially intrinsic job-content factors such as increased difficulty, diversity, identity, control, and work-cycle time. In addition the results suggested that some context factors such as greater opportunities for growth and advancement are also correlated with increased job satisfaction. The dichotomized view of motivators and hygiene factors was not given unequivocal support, and the contribution of hygiene factors to job satisfaction appears to be greater than was credited by Herzberg and his associates. Job satisfaction and motivation appear to be far more multidimensional than is suggested by the two-factor theory.

Although the correlational studies suggested the considerable impact of job enrichment upon job satisfaction, the link between enrichment and productivity was not unequivocally supported. However, increases in perceived satisfaction did appear to be associated with decreases in avoidance behaviors such as absenteeism and turnover. This effect would ultimately impact upon productivity.

The following job-intervention studies were considered prototypes: (a) David and Valfer (1966), (b) Ford (1969): male linemen, (c) Ford (1969): female clerical workers, (d) Rush (1971), (e) Bishop and Hill (1971), (f) Maher (1971), (g) Kraft (1971), (h) Lawler, Hackman, and Kaufman (1973), and (i) Janson (1972; cited in Glaser, 1974).

Ford (1969) reported several studies of telephone company personnel, but only those involving the male linemen and female clerical workers were considered prototypic by Katzell, Yankelovich et al. Also, of the nine prototypic job-intervention studies reported, the investigation by Lawler, Hackman, and Kaufman (1973) was considered the best executed.

The results of the job-intervention prototypes generally supported the conclusions drawn from the correlational studies. In addition, they provided data upon which to base an evaluation of the effectiveness of actual job-enrichment interventions.

The results of both the correlational- and job-intervention prototypes, as well as data gathered from other studies, lead to the following tentative conclusions about the effectiveness and utility of job enrichment:

1. Most job-enrichment interventions are ill-defined and poorly executed.

2. The impact of job enrichment on satisfaction and productivity is by no means clear; however, the enrichment-satisfaction relationship

is better supported in the literature than is the enrichment-productivity relationship.

3. Since the most methodologically sound support for job enrichment comes from correlational studies rather than job-enrichment interventions, it would be premature to conclude that job enrichment is typically associated with improvements in either job attitudes or performance.

4. Persuasive evidence suggests that not all workers are responsive to job-enrichment interventions and more emphasis need be placed on the impact of individual and cultural differences.

5. The effectiveness of job enrichment is in part a function of organizational factors far broader in scope than job enrichment, such as the overall management system or organizational climate.

6. Job enrichment can have an inadvertent negative impact on those workers whose jobs are enriched as well as on other workers, including supervisors.

7. Organizational factors other than those typically associated with job enrichment probably contribute substantially to motivation, satisfaction, and productivity.

8. Job enrichment should never be imposed upon an organization without a prior thorough analysis of organizational and individual needs.

9. The support and cooperation of both management and labor appear to be essential if job enrichment is to be successful.

10. Most job-enrichment research and application has been directed toward unrepresentative samples. For example, despite its historical roots as an antidote for blue-collar alienation, even a cursory review of the literature indicates that middle-class, white-collar workers have been the primary targets for research and application.

Opposition to Job Enrichment

Introduction. Job enrichment is a controversial topic. Although for some it has taken on a quasi-religious character and is praised as a panacea for organizational ills, it has also been attacked by personnel at all organizational levels. Much of the job-enrichment literature consists of articles describing the opposition of both management and labor, and ways to overcome this opposition. See, for example, Myers (1971), Sirota and Wolfson (1972a, 1972b), Powers (1972), Tregoe (1974), Schappe (1974), and Smith (1976). Labor representatives have expressed the concern that job enrichment might be exploitative and unresponsive to the actual needs and values of workers. See, for example, Fein (1971, 1973a, 1973b, 1974, 1976), Brooks (1972), Gomberg (1973), and Wool (1973).

The Opposition of Management. Schappe (1974) effectively summarized the misgivings of management. He pointed out that for some managers enrichment represents an implicit admission that they are not doing their job well. Since managers naturally like to suppress this feeling, they have a tendency to claim that job enrichment is not necessary; i.e., that no problems exist. The belief that job enrichment is incompatible with profits, and just another unproven, time-consuming, and costly program is frequently expressed. Managers sometimes also feel they lack the power to effectively enrich jobs, or that such an effort would be impractical due to the interdependency of jobs. They also argue that they are constrained by union contract, company policy, or resistance to job enrichment by the workers themselves. Some managers, having never rid themselves of a basic contempt for workers, frankly feel that workers do not deserve enriched jobs. Also, for some managers, job enrichment represents a threat to their own jobs in terms of diminished supervisory control and managerial perrogatives.

Sirota and Wolfson (1972a) provided similar insight into the perspective of the reluctant manager. They also presented additional managerial arguments against job enrichment, pointing out that organizational pressures, competition, and conflict, as well as employee and manager mobility, interfere with job enrichment. They mentioned the commonly held assumption that technological constraints make job enrichment impossible or necessarily trivial. The theoretical and methodological rigidity of most job-enrichment practitioners was another obstacle presented. In addition, it was indicated that managers, due to the perceived uniqueness of their respective situations, believe that job enrichment cannot apply to them. Others are resistant to change since they conclude that job enrichment is just good management practice which they have been following for years.

The once-keen interest in job enrichment and other forms of job redesign appears to be waning among managers. Hackman (1974, 1975) pointed out that job enrichment is frequently implemented in an inept fashion. As a result, job enrichment fails as often as it succeeds and disillusioned managers are becoming reluctant to use the technique.

Opposition of Labor. Like management, representatives of labor have been vocal in their opposition to job enrichment. Schappe (1974) discussed several of the concerns of labor. He stressed that the various reservations expressed by labor are rooted in a basic distrust for management. Schappe described labor as being both confused and skeptical since so many different types of interventions, such as increased busywork or rotation from one boring job to another, have been incorrectly called job enrichment. They fear that job enrichment represents a subtle form of exploitation by management, a something-for-nothing approach by which management benefits in terms of increased productivity without paying labor for it. Labor fears that enrichment will threaten their opportunities for economic gain and ultimately, even their jobs. Job enrichment is so intangible as not to be perceived as a reward and it is difficult for labor to translate this type of intervention into bread-and-butter terms. There is also a tendency for labor to claim that job enrichment conflicts with contract job descriptions which they consider important safeguards to job security. Labor unions generally fear the potential threat to their power and influence which job enrichment represents since, to the extent that job enrichment is able to cure blue-collar ills, labor unions become unnecessary.

Fein (1971, 1973a, 1973b, 1974, 1976), an industrial engineer claiming to represent labor, has been one of the most outspoken critics of job enrichment.

He claimed that the behavioral scientists who promulgate the job-enrichment concept have practically no understanding of the needs or values of the worker and that they have imposed their middle-class ethic on a population whom it does not fit. He reviewed a number of job-enrichment and job-satisfaction studies and pointed out methodological problems which bring the results of these studies into question. Perhaps his most poignant criticism pertains to the tendency to use unrepresentative subject populations. Most job-enrichment studies have been conducted using subjects other than those for whom the technique was originally intended. Although job enrichment is claimed to be a remedy for blue-collar alienation, most job-enrichment studies have been conducted with clerical, technical, professional, or supervisory workers. Fein argued that when blue-collar workers have been used as subjects, they have typically been selected from a small group of highly achievement-oriented workers whom he claimed represent only approximately 15% of the work force. The other 85%, Fein claimed, do not want nor expect enriched jobs. They maintain their well-being by not seeking meaning from work, which, he claimed, could not easily be made meaningful. Instead, they seek meaning elsewhere in their lives and expect work to provide them with the economic means to make this possible. At work they are described as seeking primarily to do their simple jobs while simultaneously being able to pass the time by talking informally with their co-workers.

A Comparison of Labor and Management Viewpoints. Although many of Fein's criticisms appear to be well taken, he represented a rather extreme viewpoint. The results of an extensive survey of both labor representatives and management conducted by Katzell, Yankelovich et al. (1975, chap. IV) indicated considerable agreement between labor and management on most issues related to job redesign, job satisfaction, work motivation, and productivity. These data suggested that Fein's perspective is not typically representative of labor.

Based on the Katzell, Yankelovich et al. (1975) data, the following conclusions regarding the viewpoints of management and labor can be drawn: both labor and management believe that work should be a rewarding part of life and free from drudgery. In fact, both groups agreed that the quality of life should be improved even if such improvements do not impact favorably upon productivity. They both also expressed the belief that younger, better-educated workers expect more from their jobs than is true of older, less well-educated workers. However, neither labor nor management felt that job changes offset a desire for increased pay. Both groups agreed that workers derive much satisfaction in life from their work, although labor leaders felt that workers are more dissatisfied than did management.

There are two important areas of disagreement between managers and labor leaders. Managers expressed a far greater concern for maintaining high levels of productivity than did labor leaders. Managers were more concerned with the erosion of the traditional work ethic and its negative impact upon productivity.

Both managers and labor leaders generally accepted the assumption that job satisfaction improves productivity. However, both groups subscribed to standard managerial practices such as better planning, more efficient work methods, more communication, and sound personnel policies, rather than to innovative worker-centered practices such as job enrichment, as the best way to promote satisfaction and productivity.

Katzell, Yankelovich et al. found that more than 70% of both groups agreed that unions are skeptical of job enrichment but would tend to support it if they could be confident that it did not represent a something-for-nothing productivity gimmick. Also, more labor leaders than managers (73% to 65%) felt that enriching jobs by increasing skill levels would increase work motivation. More than 90% of both groups expressed the belief that they could work together on programs designed to increase productivity. However, this was offset by a clear expression of conflict between the two groups, especially with regard to doubts about the genuine concern of labor for productivity and of management for worker welfare.

Responses to a few specific questions can perhaps best reflect current managerial and labor attitudes toward job enrichment. Only 12% of management and 13% of labor rated job redesign or job enlargement as a "very important" factor in influencing productivity. Forty-four percent of management and 37% of labor rated such interventions "not very important" or "not important at all." When the question was phrased in terms of motivation and attitude change, only 16% of the managers and 23% of the labor leaders thought that job enrichment, job redesign, or job enlargement was "very useful" to their organization.

In summary, the information provided in this section suggests that most managers and labor leaders do not have an extremely favorable attitude toward job enrichment. Despite the vocal support given this type of intervention by some managers and management consultants, and the general shift in managerial assumptions to a self-actualizing perspective, several factors have fostered resistance by most managers and labor leaders. Also, as Hackman (1974, 1975) suggested, inept implementation and subsequent disillusionment have probably resulted in a recent decline in the popularity of job enrichment. It appears that efforts to successfully implement job enrichment are likely to fail unless enthusiastic support on the part of both management and labor can be generated.

V. BEYOND JOB ENRICHMENT TO THE BROADER CONCEPT OF JOB REDESIGN

Weakness in Theory: Beyond Self-Actualization to a Complex View of the Worker

Introduction. The intent of this section is to explicate the weaknesses in traditional (i.e., Herzberg-oriented) job-enrichment theory and practice, and in the process, focus attention on a broader concept of job redesign and a refined view of job enrichment. This will be accomplished primarily by developing a case for individual differences based on the complex-worker assumptions of Schein and information from other sources, such as Hulin and Blood, Sheppard, and Atkinson and McClelland.

Schein's Complex-Worker Viewpoint. Schein (1970) recommended going beyong rational-economic, social, and self-actualizing assumptions to a new and more versatile view of workers as highly complex beings with diverse and individual motives. This new perspective does not necessarily contradict the other assumptions concerning worker motivation. In fact, it incorporates all of them since each of these viewpoints is considered applicable to some people in some situations. However, the complex-worker viewpoint represents an attempt to free work-motivation constructs from the limitations inherent in the other viewpoints. The primary weakness of the previously discussed perspectives has been the failure to focus sufficient attention on intervening variables such as individual and cultural differences which appear to mediate the job-redesign satisfaction/productivity relationship. A strong tendency existed to assume that a particular set of assumptions was applicable to all workers with disastrous consequences in terms of the rigidity of job-redesign interventions. In contrast, the complex perspective is more flexible and emphasizes individual differences, especially in terms of motives or needs.

In an attempt to clarify the meaning of the complex worker viewpoint, Schein presented a new set of assumptions concerning motivation and organizational behavior. These are summarized as follows:

1. In their complexity, men and women are highly variable and possess many different motives which combine and interact in complex patterns. Although arranged in a hierarchy of relative importance, these motives are subject to change from time to time and from situation to situation.

2. Human beings are capable of learning new motives. Thus their behavior in organizations is a function of a complex interaction between needs brought into the organization and new motives learned through organizational experience.

3. Motives which guide men and women in an organization, subunit of that organization, or on a specific job, may be different.

4. Factors other than, or peripherally related to, needs interact with individual needs to impact upon satisfaction and organizational effectiveness. These include such factors as tasks to be performed, individual aptitude, job experiences, interaction with others, and general organizational climate.

5. A person will respond in a unique fashion to any given managerial strategy based on personal needs, abilities, and the nature of the task to be performed. Thus there is no one strategy which will prove effective with all workers at all times.

One of the most important implications of the complex view is the suggestion that no one best method of job redesign exists. Contrary to the implicit assumption of those who stress a particular approach to job redesign and apply their preferred approach to all workers, this view assumes that individual abilities and attributes *do* interact with job redesign.

Schein's complex-worker viewpoint has been evolving for several years and several other investigators have used variations on this theme as the basis for their research. Turner and Lawrence (1965) and Blood and Hulin (1967), for example, have emphasized cultural or group differences and job characteristics. Another approach which has recently been emerging focuses on individuals' perceptions of their own needs and job characteristics. This approach is perhaps best illustrated by the work of Hackman and Lawler (1971). The work of Hackman, Lawler, and their associates has recently culminated in a new model for job enrichment (Hackman & Oldham, 1974a, 1974b, 1975; Hackman, Oldham, Janson, & Purdy, 1974, 1975; Oldham, Hackman, & Pearce, 1976) and incorporates growth need strength (GNS) as the primary individual-difference variable. Umstot and his associates (Umstot, 1975; Umstot, Bell, & Mitchell, 1976) extended the Hackman-Oldham model by incorporating goal-setting as an important element of job design and applied the model in a setting combining the realism of a field experiment and the control of a laboratory. Recent research by Barrett and his associates (Barrett, Bass, O'Connor, Alexander, Forbes, & Cascio, 1975; Barrett, Forbes, Alexander, O'Connor, & Balascoe, 1975; Barrett, O'Connor, Alexander, Forbes, & Balascoe, 1975) integrated various elements of past approaches to job redesign in a controlled laboratory setting by simultaneously taking into account individual perceptions and perceptual styles, ability levels, and other attributes in interaction with job-redesign characteristics.

Hulin and Blood: A Case for Individual Differences. Schein (1970) cited several studies in support of his complex-worker viewpoint. Other critics such as Kaplan, Tausky, and Bolaria (1969), Reif and Luthans (1972), Sandler (1974), and Porter, Lawler, and Hackman (1975, chap. 10) provided additional data upon which to base arguments favoring a new emphasis on the study of individual differences. Also, Barrett, Dambrot, and Smith (1975) have recently completed a review and annotated bibliography of literature pertaining to the relationship between individual attributes and job design. However, support for this viewpoint was first presented by investigators such as Turner and Lawrence (1965) and Blood and Hulin (1967). Hulin and Blood (1968) provided early and comprehensive individual difference data in their extensive critical review of job-redesign studies. It is this review upon which the case for individual differences presented below is primarily based. It is recommended that Hulin and Blood (1968) be consulted for an in-depth review.

A number of investigators have found that some workers prefer simplified rather than enlarged or enriched jobs (Baldamus, 1961; Kilbridge, 1960; Kornhauser, 1965; MacKinney, Wernimont, & Galitz, 1962; Smith, 1955; Smith & Lem, 1955; Turner & Miclette, 1962). Sometimes the preference for simplified jobs is associated with a desire to be able to perform a job and simultaneously converse with co-workers without a decrement in work quality (Reif & Schoderbek, 1969). This is much in keeping with the arguments by Fein (1971, 1973a, 1973b, 1974, 1976) presented in the previous section. It has also been found that different types of workers prefer different leadership styles in their supervisors (Hendrix, 1976; Vroom, 1960; Vroom & Mann, 1960).

Argyris (1959) discovered that high- and low-skill workers differed in terms of their job-content expectations. In comparison with highly skilled workers, those of low skill level (a) were less interested in performing high-quality work, (b) were less interested in learning more about their work, (c) placed greater emphasis on money, (d) placed lower estimates on their abilities, (e) expressed less desire for task diversity or autonomy, (f) made fewer lasting friendships on the job, (g) made less creative use of their leisure time, and (h) were more passive. Argyris attributed these findings to the stifling environment of most organizations. Hulin and Blood (1968) pointed out that there is no reason to believe that such differences are necessarily caused by the work environment; they could be brought to the work situation.

Blauner (1964) studied different types of industrial workers and found that unique patterns of alienation existed which could be attributed to the type of technology involved. He isolated four relatively independent psychological states which contribute to alienation: (a) a sense of powerlessness, (b) a loss of meaning in work, (c) a sense of social isolation or feeling of not belonging, and (d) a sense of estrangement from oneself due to lack of involvement in work. In this investigation, four different types of industrial workers were involved: printers, chemical workers, automobile assembly-line workers, and textile workers. The printers felt a sense of powerfulness and an integration with their group, whereas the chemical workers felt a sense of autonomy and responsibility coupled with a feeling of friendship with their co-workers. In contrast, the latter two occupational groups were quite alienated. The assembly-line workers were alienated by all four criteria while the textile workers, although resembling the automobile workers, were less alienated due to greater acceptance of powerlessness and due to paternalistic management practices. Apparently alienation is more multidimensional than job-enrichment advocates suggest. Factors associated with it need to be precisely defined and job-redesign interventions need to be specifically tailored to workers and work environments.

Several studies have demonstrated that worker responses are related to job level. Differences have been found within and between the broad categories of white- and blue-collar workers (Blood & Hulin, 1967; Hulin, 1966; Lahiri & Srivastva, 1967; Porter, 1961, 1962, 1963a, 1963b, Porter & Lawler, 1968; Turner & Lawrence, 1965). Although job enrichment has been applied primarily to middle- and upper-level white-collar workers, the blue-collar work force was the original target population for job enrichment, at least in theory. The charges by Fein (1971, 1973a, 1973b, 1974, 1976) that enrichment is largely a middle-class phenomenon and inappropriate for application to blue-collar workers, appears to be in part substantiated by the research literature. This apparently is due to the inculcation of different cultural values.

Katzell, Barrett, and Parker (1961) and Cureton and Katzell (1962) pointed out the importance of community variables as determinants of satisfaction and productivity. Turner and Lawrence (1965) discovered that rural factory workers differed dramatically from urban factory workers. Workers from urban areas expressed low satisfaction with jobs which, from an enrichment perspective, had desirable attributes, and expressed high satisfaction with allegedly undesirable jobs. These researchers used the sociological concept of anomie (i.e., a state characterized by the breakdown of norms or values) to explain this behavior. Blood and Hulin (1967) conducted a study in which they obtained similar results. However, they provided data which led them to conclude that urban workers are not normless but, as Fein suggested, they are alienated from the values of the middle class. It is for this reason, apparently, that workers respond unfavorably to job enrichment. Blood and Hulin contended that urban blue-collar workers are more content than rural blue-collar workers with repetitive jobs due to a rejection of the middle-class values upon which job enrichment is based. Thus they predicted that job enrichment is far more likely to succeed with white-collar or rural blue-collar workers, who tend to accept middle-class values. With this factor in mind, Hulin and Blood (1968) were able to explain the success or failure of most of the job-enrichment interventions which they reviewed. However, as Shepard (1970) indicated, the evidence pertaining to this viewpoint is not unequivocal.

Shepard: The Limitations of Contingency (Individual-Difference) Models. Although the case for individual differences made by Hulin and Blood (1968) and other investigators appears to be a strong one, a word of caution, as Shepard (1974) pointed out, is in order. Shepard labeled the various individual-difference hypotheses as being contingency models; that is, the applicability of job enrichment is contingent upon various intervening factors which mediate the job redesign-satisfaction/productivity relationship. He was appreciative of the importance of individual differences but warned that such a focus can be a liability if certain shortcomings, notably the confusion of individual with group differences, are not taken into account. The actuarial basis of most research tends to transform individual differences into group differences. Note that the primary emphasis of Hulin and Blood was on subcultural group differences; i.e., those between urban and rural blue-collar workers. However, to exclude urban-reared workers from enrichment-oriented job-design modifications based on this research is to ignore a sizable subset of the urban population who probably would respond favorably to job enrichment. Shepard warned against the tendency to conclude that a worker in a particular category would by definition respond unfavorably to job enrichment just because research findings might indicate that most workers in this category do not prefer enriched jobs.

Shepard also pointed out that contingency models typically ignore the possibility for change. For example, some evidence has indicated that certain workers abhor the idea of assuming increased responsibility. As such, they might be considered unsuitable candidates for job enrichment. Yet such workers might never have had much responsibility and might need to go through a period of adjustment and on-the-job training to learn how to assume such responsibility. They might gradually discover that they derive satisfaction from this newly acquired job component once they have developed competence and confidence in assuming it. Likewise, workers accustomed to performing meaningless tasks on the job might express a preference for satisfiers outside the work itself. However, the stifling job environment might have obscured their capabilities and desires even from themselves. Perhaps, after a period of time in an enriched job to which they were originally unresponsive, they might discover that opportunities for personal growth, self-expression, autonomy, and independence take on new meaning. Such potential changes need be tapped in longitudinal studies incorporating time-one time-two comparisons.

Shepard was effective in bringing the debate on job enrichment into perspective. Perhaps the opposing sides in the enrichment dialogue have become overly polarized in their viewpoints. Job enrichment appears to be a potent approach to job redesign with broad, but not universal, applicability. Individual, cultural, and other differences limit its applicability, but in the search for such intervening variables, it will be important to be attentive to within- as well as between-group differences.

Atkinson-McClelland and the Need for a More Flexible Motivational Theory. The failure of job enrichment theorists to acknowledge the diversity of motives which vary from person to person and from situation to situation appears to be one of their most critical theoretical oversights.

Before the issue of how jobs should be redesigned is brought into proper perspective, a thorough reassessment of motivational constructs will be necessary. Such a task goes beyond the scope of this report and the reader is advised to consult Tuttle and Hazel (1974) for an extensive review of motivational theory applicable to the work setting. The theories discussed by Tuttle and Hazel will not be repeated here. However, another motivational perspective particularly relevant to the job enrichment issue and not reviewed in the earlier report will be discussed. This is the motivational research, theory development, and application which has evolved based on the work of Atkinson, McClelland, and their associates (Atkinson, 1958, 1964; Atkinson & Feather, 1966; Atkinson & Raynor, 1974; McClelland, 1958, 1961, 1965a, 1965b, 1965c, 1970; McClelland, Atkinson, Clark, & Lowell, 1953; McClelland & Steele, 1973; McClelland & Winter, 1969). Their focus has been primarily on achievement motivation, but two other motives, power and affiliation, have also been given considerable attention. Although the work of Atkinson, McClelland, and their colleagues has not been as enthusiastically received by industrial psychologists and managers as has been the work of others interested in motivation, some reference to the connection between their research and job enrichment or work motivation can be found in the literature Myers, 1970; Porter, Lawler, & Hackman, 1975; Reif & Luthans, 1972; Schein, 1970; Tiffin & McCormick, 1974; Vroom, 1964).

The work of Atkinson, McClelland et al. is relevant to job enrichment and job redesign in general because of its following implications: (a) the achievement motive is closely associated with those motives upon which job enrichment is based, (b) the achievement motive is *not* the primary motivator of all people, (c) it is a critical component of economic or entrepreneurial success, (d) achievement and other motives can be developed, and (e) other motives such as power or affiliation should be considered when jobs are being redesigned.

Achievement motivation, as defined by Atkinson, McClelland, and their colleagues, is basically a desire to perform better. This is behaviorally expressed by the following actions: (a) taking personal responsibility for what one does, (b) taking moderate (i.e., challenging yet attainable) risks, (c) seeking and using feedback about one's own behavior to improve performance, and (d) being creative or innovative. Achievement is expressed in thought by a desire to (a) outperform someone else, (b) meet or surpass an internally imposed standard of excellence, (c) do something unique, or (d) to advance one's career.

From the above description of the achievement motive, its relationship to productivity becomes clear. To the extent that economic growth or entrepreneurial success is an adequate index of productivity, the relationship between the need for achievement and productivity has been effectively demonstrated in social-psychological, anthropological, and cross-cultural research. (McClelland, 1961; McClelland & Winter, 1969).

The relationship between the need for achievement, as defined by Atkinson, McClelland, and their associates, and Herzberg's motivators should also be clear. Note that Herzberg's motivators included the following job-satisfaction dimensions: achievement, recognition, work itself, responsibility, advancement, and growth. Although Herzberg's motivators appear to be slightly broader in scope, including some aspects, for instance, of the power motive, they can largely be redefined in terms of the need for achievement as conceived by Atkinson, McClelland et al. However, unlike Herzberg, they make no claim that achievement is the dominant motive for all people. Instead, as Reif and Luthans (1972) pointed out, McClelland and Winter (1969) confirmed Fein's speculation, reported earlier, that only about 15 percent of the work force is achievement oriented and thus responsive to job enrichment.

McClelland and his associates (Kolb, 1965; Kolb, Rubin, & McIntyre, 1971; McClelland, 1965a, 1965c; McClelland & Winter, 1969) have recently advanced motivational theory and practice by advocating and successfully applying the notion that achievement motivation can be developed, even among adults, using experiential learning techniques. This is in direct contrast to earlier assumptions that motives were more or less permanently formed during childhood. Motivational workshops, designed to increase the achievement orientation of individuals, have been used successfully with diverse populations all over the world (see especially McClelland & Winter, 1969).

The achievement motive has not been the exclusive focus of investigation. Some investigators have examined motives which act as barriers to achievement, such as fear of failure (Birney, Burdick, & Teevan, 1969), and fear of success (Horner, 1974). The latter motive appears particularly applicable to women. Affiliation motivation, which can be associated with the desire for close interpersonal relationships on the job, has also been investagated. Boyatzis (1973) provided a review of the affiliation-motivation literature.

Recently, McClelland and his associates have placed increasing emphasis on the power motive (Boyatzis, 1975; McClelland, 1970, 1975; McClelland, Davis, Kalin, & Wanner, 1972; McClelland & Watson, 1973; Steward & Winter, 1976; Winter, 1973; Winter, Steward & McClelland, 1977; Boyatzis, Note 5). The power motive, originally described by Veroff (1957), can be briefly defined as the desire to have impact on another or others or to have control over oneself or the environment. As with achievement motivation, the possibilities of developing the power motive in experiential workshops has recently been explored (Boyatzis, 1975; McClelland, Rhinesmith, & Kristensen, 1975; Boyatzis, Note 5), and powerlessness has been linked to such dysfunctional behavior as problem drinking (Boyatzis, 1975; McClelland, Davis, Kalin, & Wanner, 1972; Boyatzis, Note 5. Note that Blauner (1964), as reported earlier, isolated a feeling of powerlessness as one of four primary sources of alienation. Also, alcohol abuse is a great problem in industry as it is in society generally. The links between drinking, powerlessness, and alienation have important implications for job redesign: if jobs can be redesigned to give workers with high power concerns a greater sense of power efficacy, then alienation and the tendency to abuse alcohol (or other drugs) would probably decrease. However, target subject populations for the development of the power motive need not be limited to alcohol abusers. The enhancement of power efficacy through job redesign or other methods such as experiential training would be appropriate for any job incumbents with high power concerns, especially if their power motive were being frustrated on the job; e.g., women, minority groups, and low-ranking personnel. It would also appear appropriate for incumbents whose job requires the effective use of influence; e.g., managers or supervisors.

Focusing for the moment on the motives attended to by Atkinson, McClelland, and their associates, it would appear to be beneficial to both organizations and their workers to identify the degree to which these needs are effectively met or thwarted in the organizational environment. To the extent that a discrepancy exists between the need as manifested and the extent to which it is being satisfied on the job, some sort of organizational intervention would be appropriate to correct the discrepancy. Of course, it would be important that an organization's needs, as well as the needs of individual workers, be satisfied through such an intervention. In the process, worker job satisfaction and productivity would probably be increased. However, this remains an experimental question. The intervention of choice could be job redesign, although it would not need to be limited to job enrichment. Interventions other than what is typically construed to be job redesign might also be appropriate. For example, changes so comprehensive as to affect the overall management system, leadership styles, or organizational climate might be involved (see Argyris, 1964, 1970; Bennis, 1969; Bowers, 1973; Hellriegel & Slocum, 1974; Hendrix, 1976; Herman, Dunham & Hulin, 1975; James & Jones, 1974; Likert, 1961, 1967; Parker, 1974; Pritchard & Karasick, 1973; Schneider, 1974; Taguiri & Litwin, 1968). In addition, innovative training techniques such as experiential workshops designed to develop achievement or power motivation for selected populations might also be considered.

Although attention has been focused on the motivational theory of Atkinson and McClelland, this is not to imply that theirs is the only motivational perspective of relevance to organizations. A thorough reassessment of motivation as defined by a variety of investigators is in order. This task has in part been accomplished by Tuttle and Hazel (1974) but is as yet incomplete.

Of particular importance is the relative efficacy of intrinsic versus extrinsic motivators, and the effects of extrinsic reward, or other extrinsic factors, on intrinsic motivation (see Amabile, DeJong, & Lepper, 1976; Centers & Bugental, 1966; Cooper, 1973; Deci, 1971, 1972a, 1972b, 1975; Deci, Cascio, & Krusell, 1975; Dyer & Parker, 1975; Greenberg & Leventhal, 1976; Katzell, Yankelovich, et al., 1975, chap. VIII; Lawler, 1971; Lawler & Hall, 1970; Lawler & Porter, 1966; Lepper & Greene, 1976; Lepper, Greene, & Nisbett, 1973; Notz, 1975; Pritchard, 1973; Pritchard, Campbell, & Campbell, 1977; Pritchard, Dunnette, & Jorgenson, 1972; Ross, in press; Staw, 1975). Also of interest is the related topic of locus of control (internal versus external) of reinforcement (Rotter, 1966, 1975).

The concepts of intrinsic/extrinsic reward/motivation have not as yet been defined in any consistent or systematic manner in the literature (Dyer & Parker, 1975). However, studies have generally indicated that the application of extrinsic reward (especially in large quantities) typically, but not always, decreases intrinsic motivation (Pritchard, Campbell, & Campbell, 1977). It has been argued (Deci et al., 1975) that the critical element involved is the information a reward conveys concerning personal competence and personal control (or self-determination) over task performance. Apparently, such factors are determinants of intrinsic motivation and decrease in the presence of some, but not all, extrinsic reward systems. Increasing personal control and developing competencies are objectives which have been stressed in job-enrichment interventions, and they have been central to the concepts of power and achievement motivation. Also, personal control in organizations has been the primary focus of Tannenbaum (1968), and has served as a basis for the emphasis on participative-group management systems initially proposed by Likert (1961, 1967).

Personal control and the perception of personal competence are apparently not the only determinants of intrinsic motivation. Pritchard (Note 6) has recently isolated 14 such determinants and is currently involved in an experimental assessment of the impact on satisfaction and productivity of several such determinants within the context of different feedback systems. The intrinsic motivation determinants have been selected based on their anticipated utility in an operational Air Force environment. It is anticipated that Pritchard's research will bring clarity to this as yet ill-defined topic and will provide important implications for job redesign and other organizational-change efforts.

Summary: Job Redesign Responsive to the Individual Needs of Workers. The primary purpose of this section has been to suggest the importance of individual differences, and in the process, indicate the theoretical weaknesses of job enrichment and other forms of job redesign. The several approaches to job redesign based on the different managerial assumptions which have been discussed appear to be of limited utility, each being of value if applied to specific worker populations but representing an oversimplification when applied to all workers. The evidence summarized, whether from Schein, Hulin and Blood, Atkinson-McClelland and their associates, or other investigators, clearly demonstrates the failure of such approaches to fully consider individual and cultural differences, and other intervening variables. Human beings differ one from the other, and no one job-redesign approach can be expected to effectively motivate all workers.

What appears to be needed is a shift away from an exclusive present emphasis on job enrichment or past emphasis on job simplification or the human-relations approach. Alone, these interventions are inadequate and focus could perhaps be shifted to the broader, more basic concept of job redesign. This would allow far greater flexibility in the tailoring of job changes to specific target populations. This proposed shift in focus is graphically represented in Figure 3.

Job enrichment appears to be responsive to the needs of highly skilled technical, professional, and managerial employees as well as white-collar workers generally and rural blue-collar workers. It appears to be a social-class-dependent phenomenon which is not responsive to the needs of many blue-collar workers, especially urban blue-collar

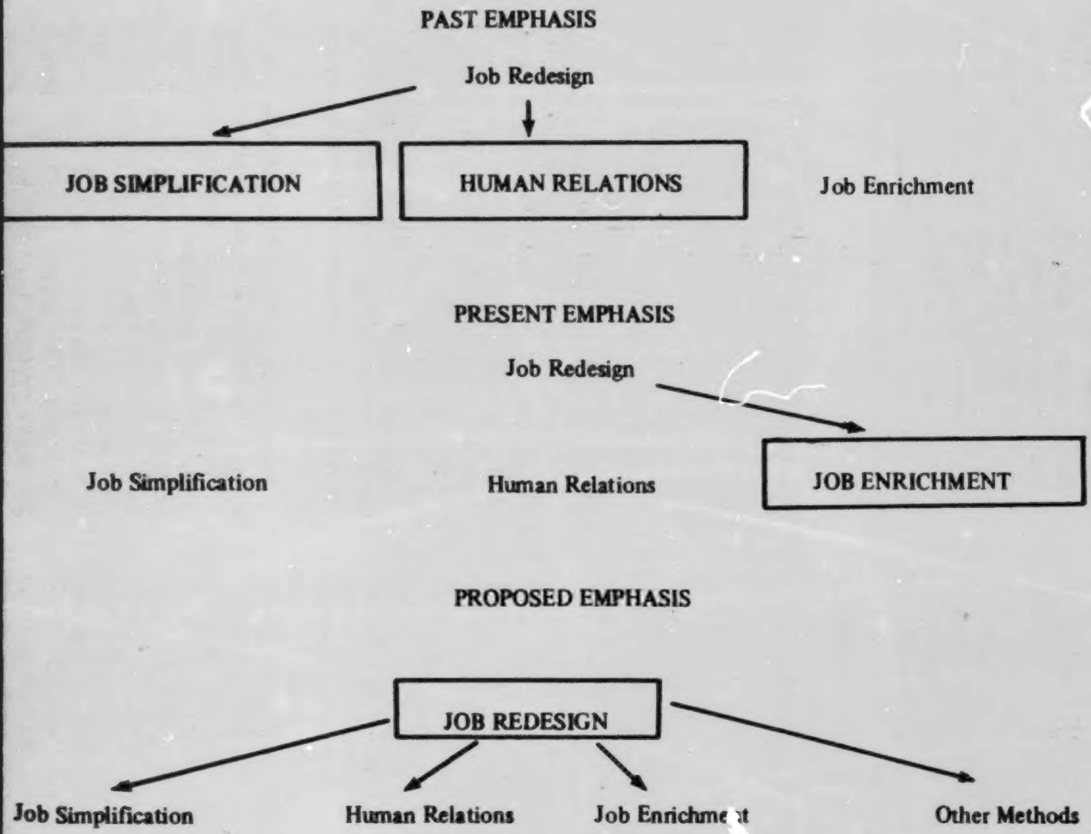

PAST EMPHASIS
Job Redesign
JOB SIMPLIFICATION
HUMAN RELATIONS
Job Enrichment
PRESENT EMPHASIS
Job Redesign
Job Simplification
Human Relations
JOB ENRICHMENT
PROPOSED EMPHASIS
JOB REDESIGN
Job Simplification
Human Relations
Job Enrichment
Other Methods

Figure 3. **Representation of proposed shift in job-redesign emphasis.**

workers who are apparently alienated from middle-class norms. For the latter, job simplification appears to be the preferred job-redesign technique, especially if opportunities for conversation between co-workers are provided. Even among workers responsive to job enrichment, job redesign based on broader theoretical principles would probably better meet worker needs. Job-enrichment interventions have typically involved insufficient concern for other potentially important variables peripheral to the job-enrichment domain, such as opportunities for affiliation or the concern for power.

Although job enrichment can usefully be applied to some specific worker populations, this is also true of other approaches to job redesign. Target populations for the various approaches need not be considered mutually exclusive since it is likely that a complex interaction exists between the various job-redesign subcategories. Differing combinations of the characteristics associated with the differing job-redesign subcategories probably apply to differing worker populations since considerable overlap probably exists between these populations. If focus is shifted from the almost exclusive current emphasis on job enrichment to the proposed emphasis on the broader concept of job redesign, managers and behavioral scientists in industry would become more eclectic and thus better able to meet individual needs. Of course, these needs must first be identified before individual job-redesign prescriptions can be developed. Managers will need to become good diagnosticians, and industrial psychologists will need to develop instruments which accurately measure job and worker attributes. Using this information, jobs can be restructured to better meet the needs of individual workers or groups of workers.

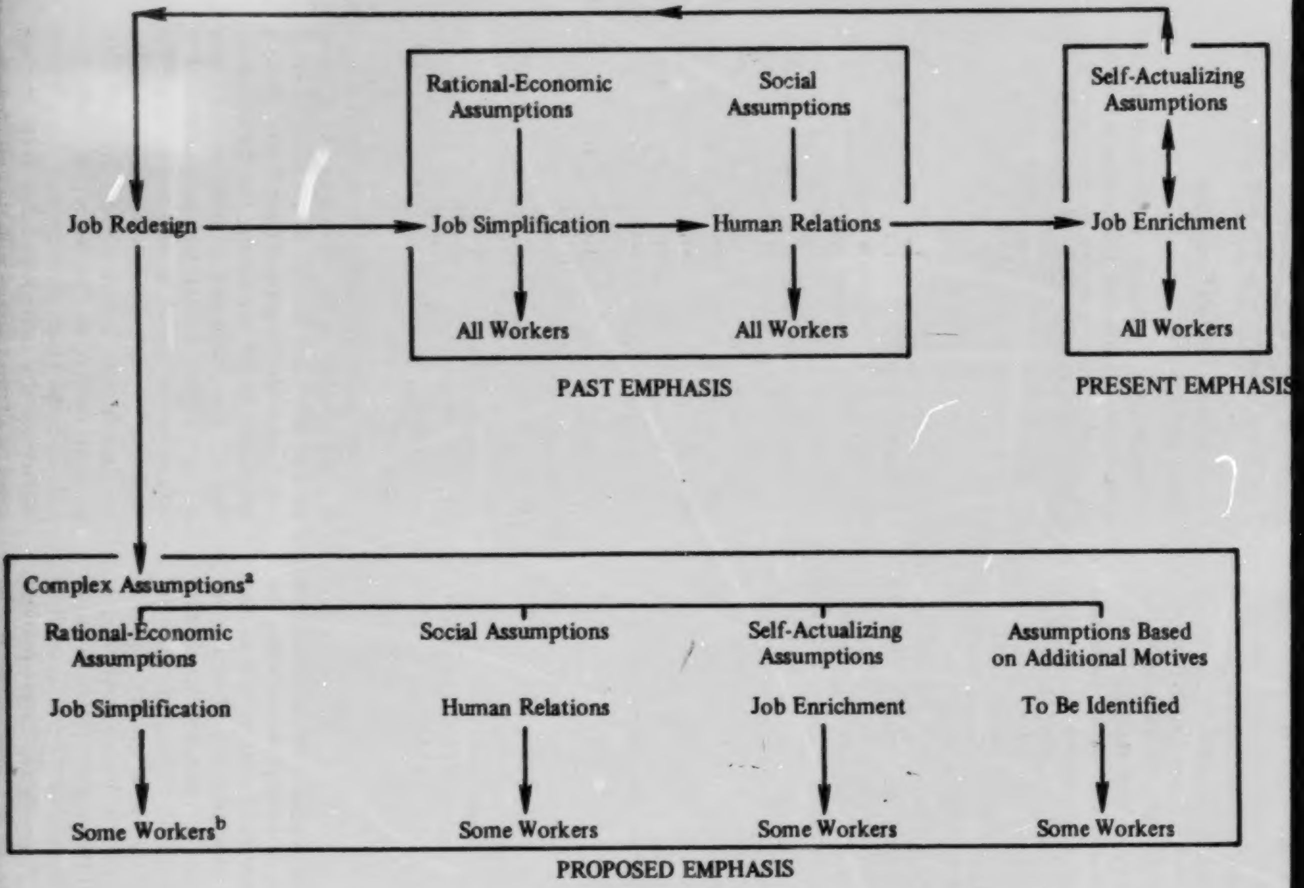
Although it is far more difficult and challenging to base job redesign on assumptions reflecting the complexity and diversity of workers than to base job redesign on the assumption that all workers are motivated by the same job characteristics, the ultimate payoff in terms of both satisfaction and productivity will likely be far greater. Figure 4 summarizes the transition in job redesign previously discussed. It portrays the evolution of job redesign from job simplification based on rational-economic assumptions to a human-relations approach based on social assumptions, to the present emphasis on job enrichment based on self-actualizing assumptions. Each of these past and present approaches has typically been considered by its advocates to be applicable to all workers. Also represented in Figure 4 is the proposed eclectic emphasis based on complex-worker assumptions with specific types of interventions considered appropriate for select worker target populations rather than all workers.

Recent Advances in Job Enrichment Theory and Research

Introduction. Although a Herzberg-oriented approach has dominated job enrichment theory and practice, other investigators have made their unique contribution either to job enrichment specifically or to job redesign generally. Names which immediately come to mind are David and his associates (Davis, 1956, 1957, 1966; Davis & Canter, 1956; Davis & Taylor, 1972; Davis & Valfer, 1965, 1966; Davis & Werling, 1960); Hackman, Lawler, and their colleagues (Hackman & Lawler, 1971; Hackman & Oldham, 1974a, 1974b, 1975; Lawler, 1969, 1971; Lawler, Hackman, & Kaufman, 1973; Lawler & Hall, 1970; Oldham, Hackman, & Pearce, 1976; Wanous & Lawler, 1972); Maher (1971); Myers (1971); and Umstot and his associates (Umstot, 1975; Umstot, Bell, & Mitchell, 1976). This list is certainly not exhaustive and a number of other previously cited investigators have also contributed significantly to innovations in job-redesign theory and practice. A process of gradual evolution and refinement of job-enrichment/job-redesign concepts appears to be taking place. Investigators are beginning to go beyond traditional or orthodox (i.e., Herzberg-oriented) approaches. It is interesting to note that even Herzberg appears to be participating in this process (see Herzberg, 1974). These events are in keeping with the emergence of complex-worker assumptions.

A new model, developed by Hackman and his associates and expanded upon by Umstot, represents an impressive example of the advances which have been made in job-enrichment theory. Focus is specifically on job enrichment, but the incorporation of the intervening variable, growth need strength (GNS), implies that job enrichment as defined in the model, is intended for a specific worker subpopulation (i.e., those with high GNS). No claim is made that all workers have high GNS, nor is the claim made that they would possess such high GNS under ideal circumstances. Thus, there is latitude for alternative approaches to job redesign based on a recognition of individual differences.

Although the Hackman-Oldham (Hackman & Oldham, 1974a, 1974b; 1975; Hackman, Oldham, Janson, & Purdy, 1974, 1975; Oldham, Hackman, & Pearce, 1976) model has been selected for discussion in this section along with its variant by


Job Redesign
Rational-Economic Assumptions
Social Assumptions
Job Simplification
Human Relations
All Workers
All Workers
PAST EMPHASIS
Self-Actualizing Assumptions
Job Enrichment
All Workers
PRESENT EMPHASIS
Complex Assumptions[a]
Rational-Economic Assumptions
Social Assumptions
Self-Actualizing Assumptions
Assumptions Based on Additional Motives
Job Simplification
Human Relations
Job Enrichment
To Be Identified
Some Workers[b]
Some Workers
Some Workers
Some Workers
PROPOSED EMPHASIS

[a] It is assumed that the various approaches to job redesign interact.

[b] It is assumed that the worker subpopulations need not be mutually exclusive.

Figure 4. **Summary of past, present, and proposed approaches to job redesign.**

Umstot and his associates (Umstot, 1975; Umstot, Bell, & Mitchell, 1976), this is not to negate the innovative contributions of other investigators. Emphasis is placed upon the Hackman-Oldham model because it appears to provide the most complete and carefully specified alternative to the orthodox two-factor model and has considerable heuristic value.

The Hackman-Oldham Model. The Hackman-Oldham model has historical roots dating back to the work of Turner and Lawrence (1965) and represents a theoretical extension of the work of Hackman and Lawler (1971). It is also, in part, founded in the expectancy-theory approach as applied to the work setting by Lawler (1969), Lawler and Suttle (1973), Porter and Lawler (1968), and Vroom (1964). Thus, it represents the culmination of many years of research on job satisfaction, work motivation, and job redesign. Formal statement of the model emerged during the development of a Job Diagnostic Survey (JDS) intended for much the same purposes as the Air Force's Occupational Attitude Inventory (OAI): the diagnosis of jobs prior to redesign intervention and an evaluation of the impact of such interventions.

Hackman-Oldham and their associates (Hackman & Oldham, 1974a, 1974b, 1975; Hackman, Oldham, Janson, & Purdy, 1974, 1975; Oldham, Hackman, & Pearce, 1976) referred to their independent variables as core job dimensions, of which there are five: (a) skill variety, (b) task identify (i.e., perceived " wholeness" of the task), (c) task significance, (d) autonomy, and (e) feedback from the work itself. Each of these task attributes is operationally defined and all but task significance were previously determined to be critical (Hackman & Lawler, 1971). Supplementary dimensions such as feedback from agents and dealing with others are also acknowledged to be important but are not specifically included in the model.

Another group of variables, critical psychological states, are probably also best classified as independent variables and are closely linked with the core job dimensions. Three critical psychological states are specified: (a) experienced meaningfulness of work, (b) experienced responsibility for the outcome of work, and (c) knowledge of the results of work activities. Hackman and Oldham suggested that all three psychological states must be present if positive personal and work outcomes are to be obtained and that these critical psychological states result from the presence of the five core job dimensions described previously. Together they can be used to predict work outcomes (the dependent variables).

The five core job dimensions are considered to be specifically linked to certain of the critical psychological states. Experienced meaningfulness of work is hypothesized to be enhanced primarily by the core dimensions: skill variety, task identity, and task significance. Experienced responsibility for work outcomes is hypothesized to be increased by autonomy. Knowledge of results of work activities is hypothesized to be increased by feedback from the work itself.

The dependent or criterion variables, which Hackman and Oldham proposed can be predicted by their model, are as follows: high intrinsic work motivation, high job satisfaction, high quality performance, and low absenteeism and turnover. Since the presence of the five critical core job dimensions is alleged to increase perception of the three critical psychological states, these aspects can be used in combination to predict the abovementioned dependent outcomes for employees with high GNS.

A summary of the Hackman-Oldham theoretical job enrichment model is portrayed in Figure 5. The core job dimensions of skill variety, task identity and task significance are presumed to be linked to the critical psychological state termed experienced meaningfulness of work. Similarly, autonomy is presumed to be linked to experienced responsibility for the outcome of work, and feedback is presumed to be linked to knowledge of the results of work activities. These independent variables, in interaction with the critical intervening variable *high* growth need strength (GNS), are hypothesized to produce favorable personal and work outcomes (dependent variables). However, if growth need strength is *low*, personal and work outcomes are hypothesized to be unfavorable and job enrichment is not recommended as the intervention of choice for such personnel.

Not only did Hackman-Oldham and their associates propose critical psychological states linked to core job dimensions, they also postulated how the core dimensions combine to produce the predicted outcomes. This interrelationship is expressed in the following mathematical equation which generates a composite score to reflect the overall motivating potential score (MPS) of a job for high GNS personnel in terms of the core job dimensions:

$$MPS = \frac{SV+TI+TS}{3} \times A \times F$$

where MPS = Motivation Potential Score
(for high GNS personnel)
SV = Skill Variety
TI = Task Identity
TS = Task Significance
A = Autonomy
F = Feedback

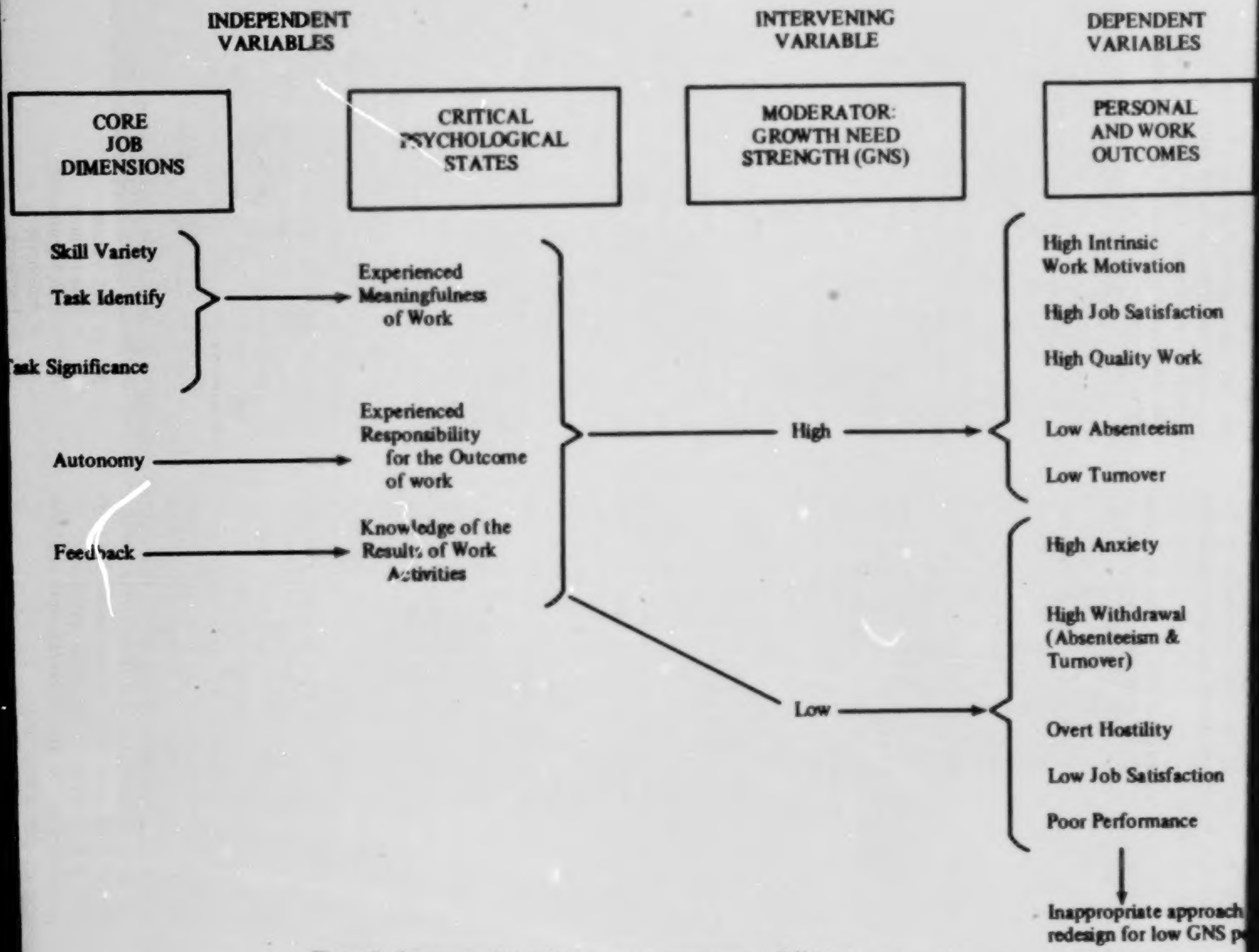

INDEPENDENT VARIABLES
INTERVENING VARIABLE
DEPENDENT VARIABLES
CORE JOB DIMENSIONS
CRITICAL PSYCHOLOGICAL STATES
MODERATOR: GROWTH NEED STRENGTH (GNS)
PERSONAL AND WORK OUTCOMES
Skill Variety
Task Identify
Task Significance
Experienced Meaningfulness of Work
Autonomy
Experienced Responsibility for the Outcome of work
Feedback
Knowledge of the Results of Work Activities
High
Low
High Intrinsic Work Motivation
High Job Satisfaction
High Quality Work
Low Absenteeism
Low Turnover
High Anxiety
High Withdrawal (Absenteeism & Turnover)
Overt Hostility
Low Job Satisfaction
Poor Performance
Inappropriate approach
redesign for low GNS p

Figure 5. Summary of the Hackman-Oldham theoretical model for job enrichment.

It would be presumptuous to assume that the Hackman-Oldham model has isolated practically every important parameter of job redesign or that it specifies the one way to proceed with such an intervention. As should be apparent from the discussion of individual differences, it would be unrealistic to expect any one model to contribute that extensively to job redesign. Rather, the Hackman-Oldham model provides a far more precise delineation of the variables which are hypothesized to be involved in job enrichment, and their interrelationships, than is provided by orthodox formulations. The model is readily measurable and can thus be put to an empirical test. It can also be used for further theoretical development. It also has considerable practical utility. By using the JDS, or the similar OAI, jobs can be assessed before, during, and after, a job-redesign intervention or other organizational-change effort. Thus, it can be more accurately determined just where change appears to be necessary, the intervention can be specifically tailored to individual and organizational needs based on actual analysis rather than potentially fallacious *a priori* assumptions, and the impact of any changes made to the work environment can be assessed longitudinally. The model is still very much in its embryo stage and has as yet been put only to a limited empirical test. It is also not without its faults. For example, the model stresses GNS as an intervening variable and appears to ignore other intervening variables which are probably of equal significance. Also, as Umstot (1975) pointed out, the prediction that job enrichment will have a significant positive impact upon performance as well as job satisfaction is not really well founded. However, the model should provide a useful methodological tool and frame of reference for future research.

The Umstot Integrated Model. Umstot and his associates (Umstot, 1975; Umstot, Bell, & Mitchell, 1976) were obviously impressed by the contribution to job-enrichment theory made by Hackman and Lawler (1971) and by Hackman and Oldham (1974a, 1974b, 1975) and decided to use the Hackman-Oldham model in their own research. However, they were skeptical of the purported relationship between job enrichment and performance or productivity, especially productivity defined in terms of quantity of work rather than work quality. Brayfield and Crockett (1955) were among the first investigators to emphasize the tenuous relationship which exists between job satisfaction and work productivity. In their extensive literature review, they concluded that no systematic relationship between these two variables had as yet been discovered. Umstot's own extensive review of job-enrichment literature (Umstot, 1975), did nothing to dissuade him. In only one of 14 controlled job-design experiments did he find a significant increase in productivity. He concluded that just because job enrichment usually impacts favorably upon job satisfaction does not mean that an improvement in productivity will automatically follow. It should be noted, however, that Hickerson, Hazel, and Ward (1975) have recently contributed to the clarification of the satisfaction/productivity relationship. There appears to be a partial relationship under some circumstances.

As a result of his skepticism about job enrichment and productivity, Umstot (1975) predicted that the Hackman-Oldham model of job enrichment would primarily improve job satisfaction and other related factors but would have little impact upon productivity in terms of quantity of work produced. Influenced by the work of Locke and his associates (Locke, 1966, 1968, 1969, 1970; Locke, Cartledge, & Kerr, 1970; Locke, Cartledge, & Koeppel, 1968; see also Ivancevich, 1976; Latham & Baldes, 1975, Latham & Kinne, 1974; Ronan, Latham, & Kinne, 1973 Terborg, 1976), Atkinson and Feather (1966), and Steers and Porter (1974), who demonstrated a link between goal-setting and performance, Umstot decided to expand upon the theory of Hackman and Oldham by adding a goal-setting element. By doing so, he hypothesized, high levels of both job satisfaction and productivity could be obtained. This does not represent an entirely unique approach among job enrichment advocates. Myers (1970), in his relatively unique approach to job enrichment, emphasizes goal-setting as a critical and integral part of the enrichment process, rather than an adjunct to it. Also, goal-setting has been an important component of other organizational change techniques, for example experiential motivation training (McClelland & Winter, 1969) and Management-By-Objectives (MBO: Odiorne, 1965). Effective goal-setting does appear to be an important element of job design and Umstot, by incorporating this element into his experimental design, put it to an important empirical test. Umstot used assigned-goal-setting in his design. Future research might profitably incorporate participant-centered rather than organizationally imposed goal-setting since participation has been demonstrated to facilitate goal attainment (see Kolb & Boyatzis, 1970; Latham & Yukl, 1975, 1976). However, while goal-setting appears to improve performance, the relative efficacy of participative versus assigned goal-setting remains an unsettled issue (Ivancevich, 1976).

In addition to expanding upon the Hackman-Oldham model by incorporating the element of goal-setting into his design, Umstot further added to the model by placing more explicit emphasis on intervening variables other than GNS. In addition to GNS, he specifically included subcultural disposition, organizational climate and goal acceptance among the intervening variables in his integrated model. Unfortunately, due to experimental design and sampling limitations, only GNS and goal acceptance were put to an empirical test.

Despite such limitations, however, Umstot's experimental design was very unique and avoided important shortcomings of previous designs. Most noteworthy is the fact that Umstot created a bogus but very realistic company of his own in order to combine the realism of a field experiment with the experimental control usually available only in a laboratory setting. Overall, the research results of Umstot and his associates were in support of his model, lending weight to the Hackman-Oldham model while supporting the contention that goal-setting is an important job-design attribute if productivity in terms of work quantity is to be enhanced. Umstot's integrated model is summarized in Figure 6. Note that Umstot's model is based largely upon the Hackman-Oldham model with regard to the job-enrichment component; however, Umstot and his associates have specifically included additional intervening variables such as subcultural predisposition and organizational climate. Also, a task-goal-structure component is included, with goal specificity presumed to be linked with experienced clarity of expectations and goals, and goal difficulty presumed to be linked with perceived job challenge. These aspects, in interaction with goal acceptance as an intervening variable are hypothesized to impact favorably upon productivity while job enrichment is hypothesized to impact primarily upon satisfaction.

VI. CONCLUSIONS AND IMPLICATIONS FOR AIR FORCE RESEARCH AND IMPLEMENTATION

Job enrichment represents one variety of job redesign which is only one of several interrelated approaches to planned organizational change. Attempts at enhancing organizational effectiveness through planned change can focus on changing individuals, specific organizational structures such as jobs, or more global aspects such as management systems or overall organizational climate. The job-enrichment and job-redesign focus of this report is not to negate the potential utility of other approaches to organizational change. There appears to be no "one best method" either of job redesign or of organizational change. Benefits in terms of motivation, job satisfaction, and productivity can probably best be derived from an eclectic approach flexible enough to respond to different individual and organizational requirements. Such an approach would be founded upon a knowledge and appreciation of the wide variety of job-redesign and other organizational-change methods which might be applied alone or in combination to specific worker subpopulations based on a thorough diagnosis of individual and organizational needs.

In the process of becoming good diagnosticians, managers and researchers need to resist the temptation of becoming dogmatic. Insufficient hard data are available to enable at this point determining what approach is most appropriate for specific worker subpopulations. Rather than assume beforehand, that what is good for all workers is a given, it is important to discover what individual workers or groups of workers want. If individual and group needs, once diagnosed, are determined to be compatible with organizational goals, then action can be taken to meet these needs, providing it is cost effective, through job redesign or other methods. The impact of such changes upon satisfaction and productivity can then be assessed during and following the experimental phase of the intervention. Good job redesign need not be synonomous with job enrichment as is evident when the importance of individual differences is brought into perspective. It is doubtful if any one job-redesign technique is appropriate for all workers. Job requirements, as well as job and personal attributes are too varied for any one theory to account for all workers unless the theory is so molar that it then lacks real meaning.

Good diagnosticians need effective instruments in order to diagnose work-system problems before specific jobs are redesigned or other organizational-change techniques are implemented. Several good instruments exist. Additional instruments might need to be developed in the course of future research and existing instruments usually undergo modification as research data accumulates. Effective (valid and reliable) extant job-diagnostic instruments include the JDS developed by Hackman and his associates (Hackman & Lawler, 1971; Hackman & Oldham, 1974a, 1975) and the Survey of Organizations, based on the work of Likert (1961, 1967) and developed by Taylor and Bowers (1972), as well as the Air Force's own OAI developed by Gould, Tuttle, and their associates

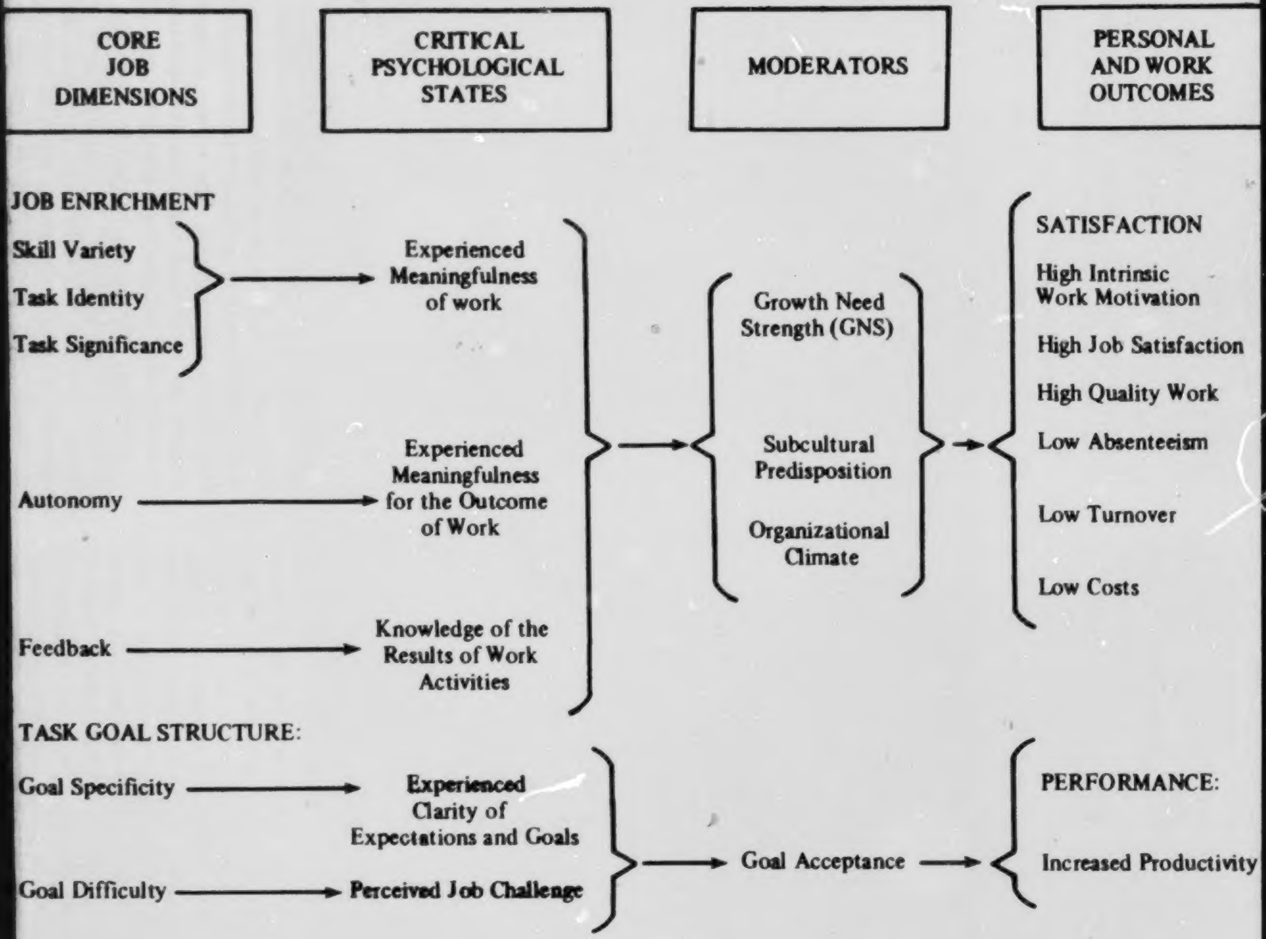

CORE JOB DIMENSIONS
CRITICAL PSYCHOLOGICAL STATES
MODERATORS
PERSONAL AND WORK OUTCOMES
JOB ENRICHMENT
Skill Variety
Task Identity
Task Significance
Experienced Meaningfulness of work
Autonomy
Experienced Meaningfulness for the Outcome of Work
Feedback
Knowledge of the Results of Work Activities
Growth Need Strength (GNS)
Subcultural Predisposition
Organizational Climate
SATISFACTION
High Intrinsic Work Motivation
High Job Satisfaction
High Quality Work
Low Absenteeism
Low Turnover
Low Costs
TASK GOAL STRUCTURE:
Goal Specificity
Experienced Clarity of Expectations and Goals
Goal Difficulty
Perceived Job Challenge
Goal Acceptance
PERFORMANCE:
Increased Productivity

Figure 6. Summary of the Umstot integrated model for job enrichment. (Adapted from Umstot, Bell, and Mitchell, 1976, p. 382)

(Gould, 1976; Gould & Christal, 1976: Tuttle, Gould, & Hazel, 1975).

The OAI, which is primarily an attitude inventory measuring the dimensions of job satisfaction, is not the only useful job diagnostic inventory currently in use in the Air Force. Also available are numerous career-ladder-specific job inventories which measure with great specificity the various tasks performed by job incumbents. Both the OAI, and the various job inventories can be computer analyzed using Comprehensive Occupational Data Analysis Programs (CODAP) which have been undergoing continuous development in the Air Force for several years (see Weissmuller, Barton, & Rogers, 1974; Stacey, Weissmuller, Barton, & Rogers, 1974). Not only can specific work attitudes relating to job satisfaction and dissatisfaction be isolated and the various tasks performed be determined; additional demographic, biographical, and historical information can be obtained using the Uniform Airman Record (UAR) and the Uniform Officer Record (UOR) files. These comprehensive personnel records are updated frequently and provide valuable longitudinal information for time-one time-two comparisons and other purposes.

The UAR and the UOR can be used in conjunction with job-task and attitudinal inventories to monitor naturally occurring changes such as transfers or equipment modifications rather than experimentally induced job changes. Examining naturally occurring changes provides the advantage of avoiding potentially confounding effects (i.e., Hawthorne effects) sometimes associated with direct experimental intervention in the workplace.

The rationale for such an alternative research methodology and the distinction between the study of naturally occurring and experimentally induced change need further elaboration. Job-enrichment and other job-redesign research implies an intentional intervention in a job environment and thus falls into the experimentally induced category. The basic paradigm for such research is as follows: First, a time-one measurement of attitudes, productivity, and other person characteristics or job properties is taken prior to job intervention. This provides baseline data against which the impact of experimentally induced changes can be compared. Then, the experimental phase begins: First, job changes are implemented. Finally, during or following the experimental phase, a time-two (or subsequent) measurement of attitudes, productivity, and other variables is taken and contrasted with the baseline data to assess the impact of the intervention.

The basic paradigm for the monitoring of naturally occurring change is the same as for experimentally induced change except that no intentional job changes would be implemented other than those which occur as part of the dynamic quality of organizations over time. Such an approach probably falls outside of the domain of job-enrichment research. However, it is closely related to it and is included here since it provides some definite advantages, is well suited to the Air Force environment, and can serve as an important complement to job-enrichment research.

Some shortcomings are associated with even the best job-enrichment or job-redesign research. Whenever a direct experimental intervention is undertaken with human subjects, research participants can bring to the experimental environment their own subjective assessment of the situation which might affect their behavior, be unknown to the investigator, and be at odds with the experimenter's purposes. Such hidden agendas are reactions to the demand characteristics of an experiment and a participant's behavior might reflect the influence of these characteristics rather than the influence of the experimental treatments. In addition, investigators as well as participants have been known to respond to the demand characteristics of experiments since they bring to their work their own personal biases and a definite vested interest in the experimental outcomes.

Participant as well as experimenter reaction to demand characteristics has fostered an interest in the use of unobtrusive measures in research. As Gould (1976) has pointed out, the dynamic quality of Air Force jobs, in contrast to the relatively static quality of civilian blue-collar jobs, provides a unique opportunity to evaluate the impact of job changes free from the influence of concomitant variables associated with direct experimental interventions. He argued that many changes are continually taking place in Air Force jobs through transfers, equipment and procedural modifications, and discharges which provide new work environments or produce redistributions of tasks within environments. The impact of these changes can be studied using time-one time-two comparisons. Longitudinal administrations of Occupational Surveys can be used to derive task-level-specific definitions of jobs for individuals at two or more points in time. Using these data, the normally occurring changes in levels of variety, complexity, and responsibility in jobs can be associated with changes in job satisfaction or productivity.

The Air Force has already begun to make progress in collecting job-change and attitude-change data for a number of specific career ladders using unobtrusive measures. Analyses of these data are currently underway and the relationships uncovered should have profound implications for job redesign within these specialties.

It appears that the study of naturally occurring changes in jobs and the resultant changes in attitudes and productivity can serve as an important complement to intervention-oriented job-redesign research. Both unobtrusive and direct-intervention methods should be used in order to provide as complete an understanding as possible of the job attributes which elicit high levels of satisfaction and productivity. The unobtrusive approach can also serve as an important precursor to job intervention, providing the diagnostic data base needed to develop intelligent individualized prescriptions for job redesign.

Regardless of whether an unobtrusive or direct-intervention approach is used, there are a number of areas of research which are in need of further exploration. Many of these areas of concern are currently being investigated by personnel associated with the Occupation and Manpower Research Division of the Air Force Human Resources Laboratory (AFHRL).

Job satisfaction and work motivation, for example, are areas in need of additional investigation in order to better isolate the person characteristics and job properties involved. Personnel of the Occupation and Manpower Research Division are involved in an ongoing effort to determine the dimensions of job satisfaction for Air Force personnel on a macro, as well as a career-ladder-specific scale. Under contract, a taxonomy of intrinsic motivation is being developed which will ultimately be applied in an effort to increase the productivity of Air Force enlisted personnel. The relationships between job satisfaction criteria and measures of task-level performance ratings, aptitude, motivation, background information, interests, and sociometric standing are also being investigated. Focus is on the impact of motivation on performance and on the characteristics of incumbents in relation to their jobs. Since the areas of job satisfaction, work motivation, and job redesign overlap to such a great degree, this research should contribute greatly to charting the course of future job-redesign efforts.

Also of great potential relevance is the investigation currently being undertaken by AFHRL concerning the impact of supervisory/leadership styles and global organizational-climate factors on satisfaction and productivity. Another relevant study concerns a career-ladder-specific investigation of discharged airmen with the intent of isolating possible job-related stress factors.

Research interest could profitably focus in other areas also. For example, goal-setting, determined by Umstot (1975, 1976) to contribute significantly to productivity, could be further explored. Productivity itself needs to be better defined and measured, and additional task attributes impacting upon it need to be identified.

In addition, personological motivational variables such as Atkinson-McClelland's achievement, power, affiliation motives, and Hackman-Oldham's GNS might be explored as potential moderators of the job-redesign satisfaction/productivity relationship. A need or motive analysis of the OAI, based on extant criteria developed by these investigators, might be used to measure these variables.

As Turner-Lawrence and Hulin-Blood have pointed out, cultural differences represent another important intervening variable. In fact, since intervening variables have been given too little attention generally, there are probably several other variables of this category which should be examined.

The primary purpose of this report has been to provide a preliminary evaluation of job enrichment and its utility to the Air Force, and to determine how, if at all, job enrichment should be included in the ongoing research program of the Occupation and Manpower Research Division. The information provided in this report serves as a basis for the conclusion that job enrichment is a job-redesign technique of considerable, yet limited, utility. If carefully applied and rigorously evaluated, it has the promise of improving the work situation of specific worker subpopulations, which are not as yet clearly identified. However, it appears not to be applicable to all workers.

Job enrichment is neither the panacea it is claimed to be by its advocates, nor need it be relegated to the status of a passing fad, as claimed by its detractors. It has been largely based on a theory of dubious value, ill-defined operationally and poorly executed and evaluated. It has also been applied and evaluated using unrepresentative worker populations, and its potentially positive impact (upon certain worker subpopulations) has been far more conclusively demonstrated in relation to satisfaction than to productivity. Job enrichment can have a decidedly negative impact upon some workers and has generated much opposition on the part of both workers and managers. This opposition would need to be overcome if a specific job-enrichment intervention were to be successful. Enrichment should not be considered the technique of choice for all workers. Instead, it represents just one among several potentially useful job-redesign and other organizational-change techniques.

On the more positive side, job enrichment does appear to have great potential value if it can be better operationally defined, better researched, and applied to specific worker subpopulations predetermined to be appropriate candidates for such an intervention. Some progress is being made in this direction. Theoretical advances have been made recently and the task attributes in the enrichment domain more carefully defined. Also, investigators are becoming increasingly aware that the success of job enrichment is contingent upon intervening variables which limit the worker populations to which this particular method of job redesign should be applied.

Job enrichment is a middle-class phenomenon which appears to work well with job incumbents who share middle-class values. It appears to work less well with most categories of blue-collar workers, especially those with low GNS and those from urban environments. This last point is ironic since it was the alienation of the blue-collar worker for which job enrichment was to serve as an antidote.

In conclusion, a job-redesign research and applied program should not focus exclusively on job enrichment. Rather, such a program should focus attention on the several potential approaches to job redesign since different approaches will likely be appropriate for different workers. The challenge will be to determine what approach or combination of approaches should be used with specific worker populations. Individual and group differences, within and between occupational specialties, will need to be determined and used as a basis for formulating highly worker-specific interventions.

It is recommended that a job-redesign research and applied program be implemented rather than a job-enrichment program per se. By so doing, greater flexibility can be retained due to focus on the more global concept of job-redesign research as an adjunct to an already existing interest in job satisfaction and work motivation. To focus on the broader concept of job redesign is not to ignore job enrichment or to negate its utility; it is, rather, to acknowledge the potential utility of several methods of job redesign. Also, job redesign need not be the sole focus. Consideration should be given to the usefulness of other organization-change techniques as well, and increased emphasis should be placed on such concerns as defining the parameters of effective management systems, organizational climates, and organizational development in general, for it is likely that such variables interact with job design to influence satisfaction and productivity.

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APPENDIX A: EXTENDED HISTORICAL PERSPECTIVE: CHANGING MANAGERIAL ASSUMPTIONS ABOUT THE WORKER AND WORKER MOTIVATION

Introduction

This appendix represents a more extensive historical perspective than was provided in Section II of the main text. The same topics are covered in greater detail here. This more detailed discussion will provide the unfamiliar reader with a more coherent frame of reference than would be obtained from the discussion in the text. The references, cited in Appendix A, have been included among the references for the main text.

Job enrichment is based on a certain set of assumptions about four important concerns of management: productivity, job redesign, work motivation, and job satisfaction. However, managerial assumptions concerning these and related topics have undergone considerable change during the past century.

The primary concern has been productivity and how it should be effected, maintained, or increased. Job redesign has been used as a technique to influence productivity since the early days of mass production. However, in original form, it was antithetical to recent job-enrichment interventions. With work motivation, the focus has shifted from the once exclusive concern with extrinsic reinforcers to the current emphasis on intrinsic factors. Also, only recently did job satisfaction come to be considered an important concern of management. Thus the evolution of job enrichment can best be understood within the context of changing managerial assumptions about the nature of the worker and work motivation.

The Rational-Economic Worker and the Principles of Scientific Management

With the advent of the industrial revolution and later, mass production and assembly-line techniques, work rationalization (job simplification) and efficiency became the primary methods used by management to increase productivity. Jobs were made as simple as possible in the interest of efficient production. Worker attitudes were almost totally ignored and money was thought to be one of the few effective motivators. As implied by the above practices, workers were held in low esteem by management.

The traditional assumptions by management about the worker have been summarized by McGregor (1957, 1960) in terms of what he labels Theory X (in contrast to Theory Y) assumptions. According to McGregor, the traditional manager (Type X) assumed that the average worker (a) had an inherent dislike for work, (b) had to be coerced, controlled, and directed to effectively work toward organizational objectives, (c) preferred to be led, disliked responsibility, lacked ambition, was concerned with security above all, and (d) was passive, gullible and not very bright. Schein (1970) further elaborated on these traditional assumptions with the following observations: workers were thought to be (a) primarily motivated by economic incentives, thus under the ultimate control of the organization and (b) distracted from the pursuit of organizational objectives by irrational traits and feelings which had to be neutralized through rigid organizational control.

For additional insight into traditional managerial assumptions, see Likert's (1967), System 1 (exploitative-authoritative) management system, or Blake and Mouton's (1964) 9,1 managerial grid.

It is not difficult to understand how such assumptions would lead to an extreme rationalization and simplification of the workplace with little or not regard for the feelings, attitudes, or personality traits of workers. Since it was believed that the workers neither wanted to work nor to assume much responsibility, their work might as well be as simple and rational as possible in the interest of productivity. If it was dull or boring, this mattered little since the worker was assumed to be both compliant and not very bright. The needs, feelings, attitudes, and idiosyncratic traits of the worker, assumed to be irrational and counterproductive to organizational objectives, could not be explored as a source for work motivation. Instead they had to be rigidly prevented from surfacing so as not to interfere with efficient production. Apparently, the idea that workers might be able to derive satisfaction from the work itself was given little or no consideration. Money, it was believed, could be used to motivate workers to do almost anything. That they might dislike, or even hate, their work was irrelevant or inevitable since they were not supposed to like it.

As has been suggested, traditional assumptions led to what is commonly referred to as job simplification, the first popular approach to job redesign. This fragmenting of work into easy-to-complete, repetitive, isolated and time-efficient tasks under strict supervision and control found its most ardent advocate in Fredrick Taylor, who, in 1911 first published his now famous *Principles of Scientific Management* (see republication, 1947). As a result of Taylor's considerable influence on managerial practices of that period, industrial engineers and psychologists spent the next several decades involved in pursuits such as time-and-motion studies to further rationalize the workplace. Men and women became little more than the appendages of machines and were expected to be just as efficient.

Although the attitudes and most of the needs of workers were ignored, job simplification did work for a time and produced enormous gains in productivity. Eventually, however, there was a price to pay, both for the individual worker and for the organization.

The price paid in terms of the worker is generally referred to as worker alienation, or more popularly, "blue-collar blues." Documentation of this phenomenon as a reality is provided in such works as Katzell, Yankelovich et al. (1975); *Work in America* (1973), a report by a special task force to the Secretary of Health, Education, and Welfare; and in the report of the U.S. Senate Subcommittee on Employment, Manpower, and Poverty, *Worker Alienation, 1972.* The alienation of workers is also discussed in such books as *The Doomsday Job* (Peskin, 1973) and *Where Have All the Robots Gone?* (Sheppard & Herrick, 1972). The drift toward alienation can be described in terms of a growing sense of apathy, boredom, dissatisfaction, and frustration on the part of workers. Usually the disaffection was expressed in subtle ways, but on occasion it became quite militant. Unions began to form and gain strength and an inimical relationship between management and labor developed. Labor-management became locked into adversary positions with conflicting rather than common goals, and strikes and disputes became commonplace.

It was not only the worker who suffered as a result of worker alienation, but also management. Management suffered primarily in terms of absenteeism, turnover, poor quality of workmanship, occasional sabotage, downtime due to strikes, and the ever-increasing costs of meeting demands for increased pay and fringe benefits.

The increased demands for higher pay and more fringe benefits deserve further elaboration since they tie directly to a later interest in intrinsic rather than extrinsic motivation. If workers could expect to get little from their organizations except money, they wanted more of it. In addition, as their power increased, workers demanded an increase in fringe benefits and a decrease in the length of the work week. All of these demands and the general alienation of the worker began to impact unfavorably on corporate productivity and profits. Despite ever-increasing extrinsic motivators, workers remained basically dissatisfied with their jobs and alienated from their organizations.

Most important from a management point of view, the tangible increases in productivity that were gained through job simplification were being more than offset by the losses brought about by absenteeism, turnover, and poor product quality. In addition, extrinsic motivators in terms of pay and benefits became not only expensive but ineffective.

The Social Worker and the Human-Relations Approach

During the era when the efficiency with which a worker performed his job was still the primary focus of investigation, some industrial psychologists and sociologists began to focus on the motives and behavior patterns of workers. As a result, some of the traditional assumptions of management were brought into question and a new set of assumptions began to emerge. Worker productivity, which was once thought to be primarily contingent upon work rationalization and economic incentives, was found to be susceptible to the influence of changes in the pattern of social interaction within organizations.

The Hawthorne studies by Mayo and his associates, conducted during the late 1920's (first reported by Roethlisberger and Dickson, 1939), are generally cited as providing impetus for this transition. In these experiments, productivity increased regardless of the experimental intervention imposed and it was concluded that these findings could only be accounted for in terms of factors other than those deliberately manipulated by the experimenters. It was hypothesized that the observed increases in both morale and productivity could best be explained in terms of inadvertent changes in interpersonal relationships which had taken place and the fact that the workers had felt special, having been selected for participation in an experiment. Later research, especially with automobile assembly-line workers (Chinoy, 1955; Jasinski, 1956; Walker & Guest, 1952) and other manufacturing-plant workers (Zalesnik, Christensen, & Roethlisberger, 1958) further suggested the impact of opportunities for social interaction on satisfaction and productivity.

Meanwhile, evidence was mounting against job simplification. Many investigators were reporting lower levels of job satisfaction among workers performing small and repetitive tasks (Blauner, 1964; Friedman, 1961; Shepard, 1969, 1970, 1971; Walker, 1950; Walker & Guest, 1952).

As a result of the new interest in the impact of human relations and the increasing concern about the negative side-effects of job simplification, a new set of assumptions emerged which were described by Schein (1970) as follows: The worker was assumed to be (a) basically motivated by social needs, deriving a sense of identity through affiliation with others, (b) capable of deriving meaning from such relationships as a substitute for the lack of meaning in the work itself, (c) more responsive to peer pressure than to organizational pressure, and (d) able to be brought under management control via a supervisor responsive to the needs of subordinates for affiliation and acceptance.

The perception of workers as social beings underwent considerable expansion and modification over the years. Likert (1961, 1967) extended the concept and can perhaps be credited with having contributed most to its development. It would be misleading to attempt to fit Likert's perspective exclusively into the social category. In fact, he incorporated certain aspects of the self-actualizing perspective and was interested in the entire organizational climate and the type of management system used. However, he emphasized social factors and was perhaps the most ardent advocate of the social concept. Likert conceived of the organization as an overlapping constellation of social systems or work groups. He advocated participative-group management principles characterized by worker participation in decision-making, free flow of communication between people at all levels of the organization, teamwork, and good supervisor-subordinate relationships.

The transition from rational-economic to social assumptions about the worker and work motivation has a significant impact on organizational policies and practices. Although productivity remained the most important concern of management, the techniques used to foster productivity began to change. Rather than rely exclusively on expensive and often ineffective extrinsic motivators such as pay and fringe benefits, another form of extrinsic motivation, social reinforcement, was given consideration. By redesigning jobs to provide increased opportunities for co-worker interaction and improved supervisor-subordinate relationships, it was believed that important social needs would be met. In the process it was assumed that job satisfaction, and ultimately productivity, would be improved. Emphasis on economic needs was expanded to include social needs. For the first time, the attitudes and perceptions of workers about their jobs, work groups, supervisors, and organizations began to be measured. Thus the social needs of workers and their perception of job satisfaction (or dissatisfaction and alienation) became important concerns of management.

The Self-Actualizing Worker and the Transition to Job Enrichment

Introduction. The acceptance of the assumption that workers were socially as well as economically motivated, combined with a new interest in measuring worker attitudes and perceptions, set the stage for the further modification of assumptions about the nature of the worker and work motivation.

Managers were no longer secure in their assumptions since the social viewpoint had effectively challenged the traditional rational-economic viewpoint. They were looking for new answers, and their growing interest in measuring worker attitudes and perceptions, in part, provided a vehicle for their discovery. Managers were disillusioned with the extrinsic motivators they had been using. Even their extrinsic social reinforcers were not having the kind of impact upon productivity they desired. They were receptive to ideas which would extend, but not necessarily contradict, the social concept. Also, since they believed in a unidimensional "Nature of Man" at least as applied to workers, they were receptive to simple concepts which could explain the behavior and motivation of *all* workers.

Underlying Motivational Assumptions: Self-actualization according to Maslow, McGregor, and Herzberg

The current interest in job enrichment can be attributed to the eventual acceptance of a set of assumptions which represented a reaction against rational-economic assumptions and an extension of the social concept. These assumptions are usually described in terms of the needs of workers for self-actualization through meaningful work. Meaningful work, it was assumed, could provide the worker with intrinsic reinforcement based on qualities inherent in the work itself. Thus the need for reliance on extrinsic reinforcement would be lessened, job satisfaction would be fostered, and ultimately, productivity would be increased. Three theorists contributed most to the development and eventual acceptance of this viewpoint: Maslow (1943, 1968, 1970), McGregor (1957, 1960), and Herzberg (Herzberg, 1964, 1966, 1968; Herzberg, Mausner & Synderman, 1959).

Maslow's Hierarchy-of-Needs Theory. A comprehensive statement of Maslow's position was first published in 1954 (see second edition, 1970), although an initial exposition dates back to 1943. Maslow can be credited with having been the first to foster an interest in self-actualization among persons influential in industry despite the fact that his interest was not specifically directed at industry. Instead, he was primarily interested in developing an existential-humanist explanation of motivation, personality and mental health. His model is more philosophically than empirically based, although he does provide some postdictive anecdotal data.

Maslow postulated a hierarchy-of-needs theory of motivation, emphasizing, in ascending order, the following needs: physiological, safety and security, belongingness and love, esteem, and self-actualization. According to this theory, needs are ordered according to their ultimate importance to the individual and in terms of the order in which they become manifest under any given conditions. In Maslow's terms, human needs are organized into a hierarchy of relative prepotency. Ever higher-order needs will emerge as needs lower in the hierarchy are effectively satisfied. If the higher-order needs are for some reason not being manifest, it is explained in terms of an unsatisfied lower-order need blocking such expression. Given environmental conditions conducive to satisfying the lower-order needs, the theory postulates that the higher-order needs will naturally become manifest. Also, when the higher-order needs become dominant, the lower-order needs will no longer serve as effective motivators as long as they continue to be satiated.

According to the theory, the basic or lower-order needs are the ones which must first be met because they relate directly to survival. They comprise the physiological needs and the needs for safety and security. If they are not satisfied, they will be the dominant concern of the individual. If they are satisfied, other higher-order needs will take their place as motivators. When the basic needs are met, needs for belongingness and love (social needs) take precedence. When these needs are satisfied, esteem needs serve as the primary motivators. After the esteem needs are met, the need for self-actualization becomes dominant.

Maslow did not claim that all people become self-actualizers, but he did imply a link between the failure to self-actualize and psychopathology. Mentally healthy people, he argued, are self-actualizers and would all become self-actualizers if conditions allowed the expression of such higher-order needs.

The appeal of Maslow's theory to managers can be understood in terms of the ease with which it can explain the transition from rational-economic to social assumptions while going beyond both. Money allowed workers to satisfy their basic physiological and safety-security needs. However, once these needs were being adequately met, pay no longer served as an effective motivator. Once the basic needs were met, social needs became important and were dominant as long as the basic needs continued to be satisfied. But social needs themselves came to be satisfied and thus they also began to lose their motivational properties. In the place of social needs, even higher-order needs for esteem, and ultimately, for self-actualization, became dominant. Since the needs for self-actualization were of the highest order, only they could have a long-term motivational impact. Under ideal circumstances no needs could supersede them and the quest for self-actualization would become a perpetual motivating force for the individual.

McGregor's Theory Y. McGregor (1957, 1960) was obviously greatly influenced by Maslow and did much to introduce his motivational concepts to managers. He effectively presented the essence of the theory in such a way as to make it relevant to organizations and simple to understand. McGregor then went on to develop a new set of assumptions about the nature of the worker and work motivation. This new perspective, labeled Theory Y, is in distinct contrast to Theory X summarized earlier. McGregor apparently accepted Maslow's motivational concepts without question for his Theory Y assumptions greatly supported Maslow's viewpoint. According to these assumptions, the average worker (a) does not necessarily dislike work and can derive satisfaction from it, (b) can exercise self-direction and self-control without the need for external control or the threat of punishment, (c) can become committed to organizational objectives if ego and self-actualizing needs are met through his work, (d) will seek responsibility under ideal conditions, (e) is basically creative, and (f) is generally underutilized in modern industry.

Herzberg's Two-Factor (Motivator-Hygiene) Theory. Herzberg and his associates (Herzberg, 1964, 1966, 1968; Herzberg, Mausner, & Snyderman, 1959) can probably be credited with having contributed most to the popularity of the self-actualizing concept in industry and to the eventual implementation of job enrichment. Herzberg was influenced by Maslow and developed similar assumptions. However, Herzberg and his associates (1959) developed their own two-factor (motivator-hygiene) theory of job satisfaction and motivation based on research in an industrial setting. This research employed a critical-incident technique to measure job satisfaction. Employees were asked to recall critical events associated with their work which resulted in a marked improvement or decrement in perceived satisfaction.

Based on their research, Herzberg et al. challenged the assumption that satisfaction and dissatisfaction are bipolar extremes along the same continuum. They argued that the factors which produce satisfaction (or motivation) are distinct from the factors which produce job dissatisfaction. Instead, they claimed, the opposite of job satisfaction is no job satisfaction, not dissatisfaction; and the opposite of job dissatisfaction is no job dissatisfaction, not job satisfaction. This might seem like little more than a semantic exercise, but the difference, Herzberg suggested, is critical. Two distinctly different need categories, with different consequences for job satisfaction and work motivation, were isolated. One relates to the context of the work situation and is ultimately rooted in basic biological needs and the need to avoid pain from the environment; the other category relates to the content of the work situation and the uniquely human needs for psychological growth or self-fulfillment. The former dissatisfaction-avoidance needs are absent from the work environment, dissatisfaction results, but their presence does not necessarily produce satisfaction. The latter growth-producing needs are termed motivators. Their absense does not produce job dissatisfaction, but their presence contributes greatly to job satisfaction and motivation.

Just as Maslow claimed that satiated lower- or middle-order needs are not motivators, so also did Herzberg claim that the hygienes are not motivators. Herzberg's hygienes are similar to all of Maslow's needs below the level of esteem and self-actualization. In approximate order of importance, they specifically include the following aspects: company policy and administration, supervision, relationships with supervisors, work conditions, salary, relationships with peers, personal life, relationships with subordinates, status and security. They can perform a preventative function by lessening dissatisfaction, but are not motivators. Herzberg's psychological-growth-producing motivators, on the other hand, produce satisfaction and are closely aligned with Maslow's self-actualizing and esteem needs. Arranged in approximate order of importance, these motivators are: achievement, recognition, work itself, responsibility, advancement, and growth. Figure A1 summarizes the comparison between the similar theories of Maslow and Herzberg.

Herzberg argued that motivators are the primary source of satisfaction within an organization, whereas hygienes are the primary source of dissatisfaction. Hygienes can have positive value, for if they are improved, dissatisfaction will be lessened; however, satisfaction will not be increased and motivation will be unaffected. Thus the two-factor theory implies that the focus of any job-redesign effort should be on improving the motivator content rather than the hygiene context of the job.

Like Maslow, Herzberg's emphasis was on motivation through personal growth or self-actualization. Herzberg specifically defined the self-actualizing or growth process in terms of work content factors, clarifying its applicability to the workplace. He also provided some empirical support for his version of the motivation-through-self-actualization concept. In addition, Herzberg was eager to apply his model to all of mankind, and like Maslow, eventually developed his theory into a model for mental health. Those who are more concerned with hygienes rather than motivators are considered maladjusted (Herzberg, 1966).

It is not difficult to understand the appeal of Herzberg's theory to managers. Like Maslow, his theory can explain the transition of managerial thought from rational-economic to social assumptions while providing a basis for going beyond these assumptions. Also, unlike Maslow, his theory applies specifically to the workplace and is more specific than McGregor's Theory Y in terms of providing implications for job intervention. Above all, it is a relatively simple concept which can allegedly be applied to all workers.

Maslow, McGregor, and Herzberg had a considerable impact on management. Their emphasis on self-actualization led to a redefinition of the nature of the worker and work motivation, at least among a number of managers and industrial psychologists. The emphasis on the worker as a social being was replaced by an emphasis on the need for self-actualization among workers. It was assumed that by redesigning jobs in such a way as to bring meaning and challenge to the worker, job satisfaction and productivity would be increased. Also, by relying on motivational factors intrinsic to the work itself,

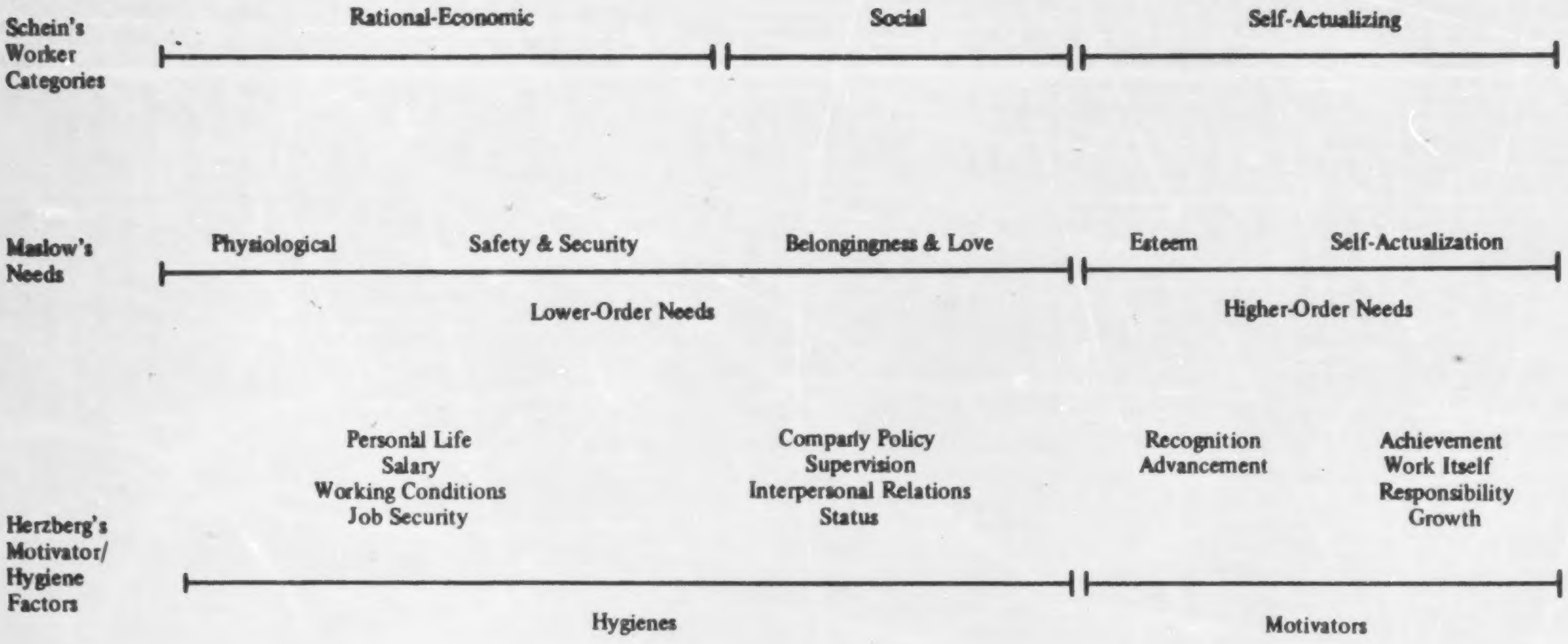
Schein's Worker Categories
Rational-Economic
Social
Self-Actualizing
Maslow's Needs
Physiological
Safety & Security
Belongingness & Love
Esteem
Self-Actualization
Lower-Order Needs
Higher-Order Needs
Herzberg's Motivator/ Hygiene Factors
Personal Life
Salary
Working Conditions
Job Security
Company Policy
Supervision
Interpersonal Relations
Status
Recognition
Advancement
Achievement
Work Itself
Responsibility
Growth
Hygienes
Motivators

Figure A1. A comparison of Maslow's needs and Herzberg's motivator/hygiene factors within the context of Schein's worker categories.

management would no longer have to rely as heavily on expensive and often ineffective extrinsic motivators.

Managerial assumptions had evolved from rational-economic to social to self-actualizing assumptions. In the process, the theoretical foundation for job enrichment was established. The changes which took place are summarized in Table A1.

Table A1. **Characterization of Rational-Economic, Social, and Self-Actualizing Assumptions along Four Dimensions**

Assumption	Job Redesign Intervention	Primary Motivation	Concern with Job Satisfaction	Concern with Productivity
Rational-Economic	Job Simplification	Extrinsic (Pay and Fringe Benefits)	Little or None	Very Great
Social	Improve Human Relations	Extrinsic (Secondary Social Reinforcement)	Very Great	Very Great
Self-Actualization	Job Enrichment	Intrinsic (Work Itself)	Very Great	Very Great

APPENDIX B: AN ANNOTATED BIBLIOGRAPHY OF JOB ENRICHMENT AND RELATED LITERATURE

This annotated bibliography is intended to serve as an additional resource for those interested in job enrichment research and implementation. Due to the large number of articles available in the literature, the scope of this bibliography has been necessarily limited. Articles were selected for inclusion based on their relevance to the topic of job enrichment and their potential contribution to research or applied programs. Several of the references previously cited have not been repeated, and generally, emphasis has been placed on references related to job-enrichment implementation rather than to theoretically oriented work-motivation research. However, a number of studies dealing with the assessment of Herzberg's theory have been included. Some of the annotations were prepared directly from the articles or books cited. However, in many cases where existing abstracts were considered sufficient, they provided the primary source of the annotation, with some revision.

1. Alderfer, C.P. Job enlargement and the organizational context. *Personnel Psychology*, 1969, 22, 418–426. The results of a 3-year job-enlargement program in a manufacturing organization were reported. Also, the author reviewed literature on the effects of job enlargement on employee attitudes and indicated possible negative effects if employee expectations of the benefits to be gained are too high.

2. Anderson, J.W. The impact of technology on job enrichment. *Personnel*, 1970, 47(5), 29–37. The problems of implementing a job-enrichment program were surveyed in 10 companies in four areas: service, heavy assembly, electronics/light assembly, and processing. Important elements of an enriched job were identified as follows: Herzberg's responsibility, achievement, recognition, advancement, and growth; Smith's autonomy, challenge, and task identity; and Lawler's autonomy, feedback, variety, and task identity.

3. Beer, M. Needs and need satisfaction among clerical workers in complex and routine jobs. *Personnel Psychology*, 1968, 21, 209–222. Maslow's hierarchy-of-needs concept was used as the basis for measuring the need for self-actualization and autonomy among clerical workers. A promotion from a routine to a complex job did not always improve an employee's feelings of self-actualization and autonomy. The results indicated that job enlargement does not necessarily fill these needs and further research was suggested.

4. Behling, O., Labovitz, G., & Kosmo, R. The Herzberg controversy: A critical reappraisal. *Academy of Management Journal*, 1968, 11, 99–108. This article attempted to resolve differences between Herzberg's duality theory (that motivators and hygienes should not be represented along the same continuum) and the widely accepted uniscalar theory (that satisfaction and dissatisfaction represent opposite ends along the same continuum). The authors discussed the confusion and conflict which were inherent in the lack of a single clearly defined theory even among investigators sharing the same general theoretical position.

5. Bishop, R.C., & Hill, J.W. Effects of job enlargement and job change on contiguous but nonmanipulated jobs as a function of workers' status. *Journal of Applied Psychology*, 1971, 55, 175–181. Low-status workers had their jobs either enlarged or changed without enlargement in the presence of high-status workers whose jobs were not changed, and vice versa. Generally, job enlargement was found to have no greater influence on job satisfaction than was found for job change without enlargement. Low-status workers tended to be positively affected by job manipulation but had a negative response when their jobs were not manipulated. These opposing directions were attributed to a double Hawthorne effect.

6. Blai, B., Jr. A job satisfaction predictor. *Personnel Journal*, 1963, 42, 453–456. This article provided a method of predicting job satisfaction in advance by relating the psychological needs of an individual to the need-satisfying potential of various occupations. These occupations were grouped as follows: professional, managerial-official, clerical, service, and trades-manual.

7. Blood, M.R., & Hulin, C.L. Alienation, environmental characteristics, and worker responses. *Journal of Applied Psychology*, 1967, 51, 284–290. The purpose of this study was to determine the

influence upon worker responses of environmental or community characteristics presumed to foster feelings of integration with, or alienation from, middle-class norms. It was predicted that workers from communities which foster acceptance of middle-class norms would be more satisfied with enriched jobs than would alienated workers (i.e., workers from communities which foster a rejection of middle-class values). Subjects were 1,390 male blue-collar workers and 511 male white-collar workers from 21 plants in the eastern United States. The results supported the hypothesis that the construct of alienation is useful in predicting worker responses and that individual differences based on community variables should be considered when jobs are redesigned. Urban blue-collar workers were found to be more alienated from middle-class norms than either white-collar workers or rural blue-collar workers. The proposal by Turner and Lawrence that blue-collar workers are anomic (normless) was rejected.

8. Bowles, W.J. The management of motivation: A company-wide program. *Personnel*, 1966, 43(4), 16–26. This article reported on a comprehensive motivational program based on behavioral-science findings concerning job-related factors which result in worker motivation or dissatisfaction. The factors were divided into two groups: Maintenance needs (physical, social, status, orientation, security, and economic), and Motivation needs (growth, achievement, responsibility, and recognition).

9. Burke, R.J. Are Herzberg's motivators and hygienes unidimensional? *Journal of Applied Psychology*, 1966, 50, 317–321. This study tested the assumption that Herzberg's motivators and hygienes represent unidimensional factors. One hundred eighty-seven subjects (male and female) ranked the importance of five motivators and five hygienes. The results indicated the lack of a unidimensional factor underlying both the motivators and the hygienes. It was suggested that the two-factor theory is an oversimplification, but that the use of the distinction between motivator and hygiene factors is useful for research purposes. A brief literature review was included.

10. Centers, R., & Bugental, D.E. Intrinsic and extrinsic job motivations among different segments of the working population. *Journal of Applied Psychology*, 1966, 50, 193–197. A cross-sectional sample of the working population was interviewed with respect to their job motivators. The sample was classified as professional and managerial, clerical and sales, skilled, semi-skilled and unskilled. It was found that intrinsic job components (opportunity for self-expression, interest-value of work, and feeling of satisfaction) and extrinsic job components (pay, security, and good co-workers) are related to occupational level. The intrinsic factors were valued more at the higher occupational levels and the extrinsic factors were valued more at the lower occupational levels.

11. Coch, L., & French, J.R.P., Jr. Overcoming resistance to change. *Human Relations*, 1948, 1, 512–532. It was suggested that management can reduce or remove worker-group resistance to change in methods of production by effectively explaining the need for the change and incorporating the worker group into the planning of the change.

12. Cooper, R. Task characteristics and intrinsic motivation. *Human Relations*, 1973, 26, 387–413. A framework for the study of intrinsic task characteristics with reference to their motivational implications was presented. The four intrinsic task characteristics discussed are: (1) physical variety, (2) skill variety, (3) goal structure, and (4) transformations. It was found that each task characteristic affects performance and satisfaction in different ways. Desires for intrinsic interest in work vary from person to person and these differences moderate the relationship between the four criterion behaviors discussed (performance, satisfaction, absenteeism, turnover). It was also shown that the dimensions were relevant to other areas of study in motivation and organizational behavior.

13. Davis, K., & Allen, G.R. Length of time that feelings persist for Herzberg's motivational and maintenance factors. *Personnel Psychology*, 1970, 23, 67–76. Feelings were divided into high and low categories. A high feeling was one in which an employee felt enthusiastic about his job, low feeling was one in which an employee felt dissatisfied about his job. The time duration for each feeling was also reported. High feelings lasted longer than low feelings. Advancement and recognition provided a high feeling and lasted for longer periods than other high feelings. Low salary, lack of advancement, company policy and administration, and supervision provided low feelings that lasted longer than other low feelings.

14. Davis, L.E., & Valfer, E.S. Intervening responses to changes in supervisor job designs. *Occupational Psychology*, 1965, **39**, 171–189. This study tested the hypothesis that lower total cost-per-unit output and greater need satisfaction for the worker (and the supervisor) would result from increasing supervisory authority and responsibility. This was accomplished by assigning to the supervisor direct control for all functions necessary to complete the product or service assigned to his work group, including inspection and final quality acceptance. Data were gathered over a period of 15 months from 11 shops in the industrial facility of a large military installation. There were 12 to 30 employees in each shop; all of the subjects were civilians. The shops were matched by the type of work, style of supervision, workers' skill, and past performance when they were assigned to control or experimental groups. A summary of the results is presented in the following table:

Predicted Changes	Achieved Changes by Treatment	
	Product Responsibility	Quality Responsibility
1. Lower Cost	no change	significant improvement
2. Higher Quality	significant improvement	improvement trend
3. Higher Productivity	no change	no change
4. Lower Personel Costs	no change	no change

Supervisors exhibited greater autonomy and greater overall personal need satisfaction. A shift occurred in the allocation of supervisors' time from man-management to technical-management. The workers responded favorably to these changes.

15. David, L.E., & Werling, R. Job design factors. *Occupational Psychology*, 1960, **34**, 190–232. The objective of this study was to identify job-content and job-perception factors related to effective performance. Cost, quality and quantity of output, and absenteeism were used to measure performance. Jobs were changed by centralizing previously decentralized functions, introducing related planning, scheduling, and control, and by enlarging job duties and responsibilities. Usable questionnaire data were obtained from 223 employees in seven departments of an industrial chemical products company. Results showed a reduction in cost and an improvement in quality. Also, there was a reduction in jurisdictional difficulties associated with maintenance jobs and an increase in employee interest in their jobs and company. Nine job factors were identified as being highly related to the criterion variables.

16. Dettelback, W.W., & Kraft, P. Organization change through job enrichment. *Training and Development Journal*, 1971, **25**(8), 2–6. Experiences with job enrichment following the Ford/AT&T design at Bankers Trust Company were reported. Variations in job design were used with both small groups and individuals. Supervisors and lower management jobs were primarily used for analysis, but changes in these jobs also impacted favorably upon the motivation of employees whose jobs were not directly manipulated. After a 1-year period, productivity was up 92 to 114% and there was a significant positive attitude shift. It was found that by enriching a worker's job there was also a growth in the responsibility of the supervisor.

17. Donnelly, J.F. Increasing productivity by involving people in their total job. *Personnel Administration*, 1971, **34**(5), 8–13. This article reported the success of a job-enrichment program which focused on increasing responsibility rather than increasing the complexity of a job. The enrichment program worked toward creating mutual goals between the company and the employee and toward allowing the employee to participate in the planning and control of his work.

18. Dunnette, M.D., Campbell, J.P., & Hakel, M.D. Factors contributing to job satisfaction and job dissatisfaction in six occupational groups. *Organizational Behavior and Human Performance*, 1967, 2 143–174. Using the basic ideas of Herzberg, subjects in six occupational groups described, using two

Q-sort decks, satisfying and dissatisfying job situations. The occupational groups used were as follows: managers, sales clerks, secretaries, engineers and research scientists, salesmen, and male subjects employed in a wide range of occupations. It was concluded that Herzberg's two-factor theory is an oversimplification of job satisfaction-dissatisfaction since either can be influenced by the job context, job content or both. Achievement, responsibility, and recognition appeared to contribute more to job satisfaction-dissatisfaction than did other job elements (working conditions, company policies and practices, and security). It was suggested that Herzberg's two-factor theory should be abandoned because of its oversimplification.

19. Evans, M.G. Herzberg's two-factor theory of motivation: Some problems and a suggested test. *Personnel Journal,* 1970, **49**, 32–35. An overview of his two-factor theory and a summary of Herzberg's suggestions for enriching jobs were presented. The author then pointed out the following problem areas in Herzberg's theory: (1) diffuseness and potential overlap of the categories (motivation and hygiene factors), (2) underestimation of the importance of pay, (3) method-bound theory which does not allow for the influence of the worker's self-esteem, and (4) under-estimation of the importance of interpersonal relationships. A test of the methodological problem was suggested.

20. Ewen, R.B. Some determinants of job satifaction: A study of the generality of Herzberg's theory. *Journal of Applied Psychology,* 1964, **48**, 161–163. This article criticized Herzberg's methodology and assumptions concerning the impact of motivators and hygienes upon job attitudes. Shortcomings discussed include (1) the narrow range of jobs investigated, (2) the use of only one measure of job attitudes, (3) the absence of validity and reliability of data, and (4) the lack of a measure of overall satisfaction. It was concluded that the generalization of Herzberg's findings beyond the situation in which they were obtained is not warranted.

21. Ewen, R.B., Hulin, C.L., Smith, P.C., & Locke, E.A. An empirical test of the Herzberg two-factor theory. *Journal of Applied Psychology,* 1966, **50**, 544–560. Frederick Herzberg's two-factor theory of job satisfaction was empirically tested using a sample of 793 employees from various jobs to test four hypotheses. Two motivator variables, the work itself and promotional opportunities, and one hygiene variable, pay, were used to test the theory. The motivators were further classified as intrinsic; the hygiene, as extrinsic. Neither Herzberg's theory, nor the traditional theory of job satisfaction was supported. Instead, the study indicated that intrinsic factors are more strongly related to both overall satisfaction and dissatisfaction than the extrinsic factor. The effect of the extrinsic variable may depend on the level of satisfaction with the intrinsic variables. It was concluded that the motivator-hygiene concept is of limited value. Classification of variables as intrinsic or extrinsic, and as primary and secondary satisfiers, was recommended.

22. Farris, G.F. A predictive study of turnover. *Personnel Psychology,* 1971, **24**, 311–328. Ten hypotheses concerning various aspects of a job were tested in order to develop a method of predicting turnover. Turnover was predicted to be related to: (1) ease and desirability of turnover, (2) involvement in work, (3) performance (usefulness to organization), (4) rewards, (5) outside orientation, (6) individual characteristics, (7) working environment, (8) group cohesiveness, (9) organizational generality, and (10) performance generality. Findings indicated that turnover was most highly associated with (1) the feeling that it would help the person's career, (2) low provision for rewarding performance and (3) lower age and technical maturity. The other hypotheses were partially confirmed. It was also determined that potential employee turnover can be predicted and thus forestalled, through the use of an anonymous questionnaire.

23. Ford, R.N. *Motivation through the work itself.* New York: American Management Association, 1969. A review of the author's experiences in implementing job-enrichment programs at Bell Telephone was presented. Procedures followed, successes, failures, problems, and the long-term effects of the program were discussed.

24. Ford, R.N. The obstinate employee. *Psychology Today,* November 1969, pp. 32–35. High turnover and poor performance were cited as major problems for business and industry. A discussion identified the work itself as the cause of the problem and not the work environment. Job enrichment was cited, with an example, as a method to make the work more meaningful and therefore reduce turnover and increase productivity.

25. Ford, R.N. Job enrichment lessons from AT&T. *Harvard Business Review*, 1973, 51(1), 96–106. This article described several job-enrichment programs at American Telephone and Telegraph. A three-step strategy for enrichment was discussed. The steps involved changes in (1) the work module, (2) control of the work module, and (3) feedback. Job nesting (the nesting of related jobs) was presented as a new approach beyond the enrichment of individual jobs. A summary of lessons learned from the 7 years of work at AT&T was presented.

26. Ford, R.N., & Borgatta, E.F. Satisfaction with the work itself. *Journal of Applied Psychology*, 1970, 54 128–134. This study focused on employee attitudes toward work. A survey based on both theoretical considerations and field experience was developed and administered to six samples ranging in size from 25 to 116 subjects in various occupational fields. Factor analysis isolated a set of eight variables, using the following attitude statements: (1) the work itself is interesting, (2) the job is not wasteful of time and effort, (3) I often feel the need for more freedom in planning the job, (4) I have reasonable say on how my job is done, (5) the job provides opportunities, (6) the job provides feedback, (7) the job is too closely supervised, and (8) it is not worth putting effort into the job. Results indicated the possibility of measuring differences in concepts about satisfaction with the work itself.

27. Friedlander, F. Underlying sources of job satisfaction. *Journal of Applied Psychology*, 1963, 47, 246–250. The purpose of this study was to identify the elements of a job that are sources of job satisfaction, to identify the group of employees for whom each group of job factors is of greatest importance, and to identify differences in job satisfaction among the different groups of employees. A questionnaire was administered to employees in three occupational groups: engineering, supervisory, and salaried. The following three factors emerged as significantly affecting job satisfaction: (1) social and technical environment, (2) intrinsic self-actualizing work aspects, and (3) recognition through advancement. This study supported earlier research by Herzberg and Schwarz.

28. Friedlander, F. Job characteristics as satisfiers and dissatisfiers. *Journal of Applied Psychology*, 1964, 48, 388–392. This study tested the assumption that job satisfaction and job dissatisfaction are on a continuum from an extreme positive, to zero, to an extreme negative. Eighty subjects rated 18 variables as to their importance for satisfaction and, at a second testing, for dissatisfaction. The results indicated that subjects who consider a particular aspect of their jobs satisfying do not necessarily find the absence of this characteristic dissatisfying. Also, it was found that the majority of characteristics seem to be significant contributors to both satisfaction and dissatisfaction. The results did not support the basic assumption that job satisfaction and dissatisfaction are bipolar. The results partially supported Herzberg and more closely supported Schwarz.

29. Friedlander, F. Comparative work value systems. *Personnel Psychology*, 1965, 18, 1–20. This study explored the relationship between growth needs (self-actualization) and deficiency needs in the work environment across two occupational levels (blue- and white-collar), and three status levels (low, middle, and high). A total of 1,468 Government employees responded to a questionnaire. Results indicated that task-centered opportunities for self-actualization are of prime importance to white-collar workers only, while the social environment is of prime importance to blue-collar workers. There were only minor differences across the status levels.

30. Friedlander, F. Relationships between the importance and the satisfaction of various environmental factors. *Journal of Applied Psychology*, 1965, 49, 160–164. The relationship between the importance of environmental factors and the job satisfaction or job dissatisfaction they elicit was investigated. A total of 1,935 Government employees of various occupational and socioeconomic levels were surveyed. The following results were indicated: (1) satisfaction and the importance of environmental factors were unrelated when mean satisfaction and importance scores were correlated across all factors, (2) a positive correlation existed between satisfaction and importance; a negative correlation existed between dissatisfaction and importance when the environmental factors were dichotomzed, and (3) satisfying and dissatisfying environmental factors were of equal importance. The result supported a dual-motivation theory of self-actualization and deprivation of needs.

31. Friedlander, F., & Walton, E. Positive and negative motivations toward work. *Administrative Science Quarterly*, 1964, 9, 194–207. This study investigated employee retention and turnover. Eighty-two

Civil Service scientists and engineers were interviewed as to why they stay with their organization and what would cause them to leave. Results indicated that the reasons for remaining were different (not opposite) from the reasons for leaving. Results were related to theories of job motivation.

32. Gifford, J.B. Job enlargement. *Personnel Administration*, 1972, 35(1), 42–45. Job enlargement, both horizontal and vertical, was defined and discussed in relation to the earlier definitions rather than the more currently accepted definitions. The motivational theories of Maslow and Herzberg, as well as the pioneering work of Charles Walker and others, provided a historical framework for the discussion. Horizontal job enlargement was defined as the meaningful addition of similar operations to provide a complete work module. Vertical job enlargement was defined as the expansion of jobs to include a complete cycle, including feedback. The type of work climate conducive to job enlargement was discussed and a method of implementation was presented.

33. Goodale, J.G. Effects of personal background and training on work values of the hard-core unemployed. *Journal of Applied Psychology*, 1973, 57, 1–9. The study investigated biographical and work-value differences between 110 disadvantaged workers (hard-core unemployed group), 180 regularly employed unskilled or semiskilled workers (comparison group), and 252 middle-class persons (control group) using the Survey of Work Values. Results indicated that when compared to regular employees, the hard-core unemployed trainees placed less emphasis on keeping busy on the job, taking pride in their work, and fulfilling the Protestant ethic. Instead, they placed more importance on making money.

34. Graen, G.B. Motivator and hygiene dimensions for research and development engineers. *Journal of Applied Psychology*, 1966, 50, 563–566. A brief review of Herzberg's two-factor theory was presented. The critical-incident technique used by Herzberg and his associates to measure job satisfaction-dissatisfaction was criticized, and a questionnaire was developed to provide a more objective measure. The questionnaire, administered to engineers, contained items representing motivators and hygienes. When item responses were factor analyzed, items representing motivators and hygienes did not cluster into homogeneous groups.

35. Greenblatt, A.D. Maximizing productivity through job enrichment. *Personnel*, 1973, 50(2), 31–39. This paper reviewed the work of Herzberg for background information as to what job enrichment is. An implementation strategy was presented which consisted of the following: management accepting job enrichment as an ongoing philosophy of managing people, a supervisory workshop to introduce the first-line supervisor to job enrichment followed by supervisory participation in planning the program, and orientation of the employee. A sample program for enriching a keypunch operator's job was presented.

36. Grote, R.C. Implementing job enrichment. *California Management Review*, 1972, 15(1), 16–21. Herzberg's two-factor theory was reviewed and a three-stage, 13-step job-enrichment model was presented, as follows: Stage One, assemble the required resources: (1) select the job, (2) establish a job-enrichment team, (3) appoint a job-enrichment project manager, (4) determine the required resources, (5) determine the items to be measured, (6) design the needed instruments, and (7) conduct a survey and analyze the data; Stage Two, implement any changes in content and discretion: (8) identify the possible changes in content and discretion, (9) screen the changes to determine a final list, (10) plan the implementation, (11) implement the changes; Stage Three, assess the results: (12) measure the effectiveness and (13) assess the organizational implications.

37. Hackman, J.R., & Lawler, E.E., III. Employee reactions to job characteristics. *Journal of Applied Psychology Monograph*, 1971, 55, 259–286. (Monograph) The conceptual framework to be tested, describing the conditions under which employee motivation can be changed through job design, was developed based on expectancy theory. Basically the premise was that it may be possible under specifiable conditions to achieve both high employee satisfaction and high employee motivation towards organizational goals. The subjects were 208 employees and 62 supervisors from an eastern telephone company who worked in 13 different job areas. Measures were obtained on (a) strength of desire for the satisfaction of higher-order needs (obtaining feelings of accomplishment and personal growth) and (b) four core job dimensions (variety, autonomy, task identity, and feedback) and (c) two interpersonal dimensions (dealing with others and friendship opportunities). The results

supported the predictions of the theory. It was concluded that when jobs are high on the four core dimensions, employees who are desirous of higher-order-need satisfaction tend to have high motivation and job satisfaction, be absent from work infrequently, and be rated by supervisors as doing high-quality work. Implications for future research on job effects and the design of jobs were discussed.

38. Hackman, J.R., & Oldham, G.R. Development of the job diagnostic survey. *Journal of Applied Psychology*, 1975, **60**, 159–170. The Job Diagnostic Survey (JDS) was described and an advanced theoretical basis for job enrichment was established. The JDS is designed to diagnose a job to determine if and how it might be redesigned to improve employee motivation and productivity and to evaluate the effects these changes would have on an employee. The survey is based on a specific theory of how job design affects work motivation developed by Turner and Lawrence and later work by Hackman and Lawler. The instrument provides measures of (1) objective job dimensions (skill variety, task identity, task significance, autonomy, feedback from the job itself, and dealing with others), (2) individual psychological states resulting from these dimensions (experienced meaningfulness of the work, experienced responsibility of work outcomes, and knowledge of results), (3) affective reactions of employees to the job and work setting (general and specific satisfaction, and internal work motivation) and (4) individual growth-need strength (an index of readiness to respond to an enriched job). Reliability and validity data were summarized for 658 employees on 62 different jobs in seven organizations.

39. Halpern, G. Relative contributions of motivator and hygiene factors to overall job satisfaction. *Journal of Applied Psychology*, 1966, **50**, 198–200. The basic hypotheses of Herzberg's theory of job satisfaction were tested. Ninety-three male subjects responded to a questionnaire in which they rated eight aspects (four motivator and four hygiene factors) of their best-liked and least-liked job. Results indicated that the subjects were equally well-satisfied with both the motivator and the hygiene aspects of their jobs. However, the motivator factors contributed significantly more to overall satisfaction than did the hygiene factors.

40. Harrison, R. Sources of variation in managers' job attitudes. *Personnel Psychology*, 1960, **13**, 425–434. Factor analysis of a 100-item questionnaire administered to 186 managers and first- and second-level supervisors yielded eight factors that affect job attitude. The following factors were isolated: (1) opportunity to advance and accomplish, (2) working conditions, (3) non-economic stability and security, (4) personal relations with own immediate supervisor, (5) compensation: pay and benefits, (6) communications from top management, (7) working relations with other in-plant groups, and (8) in-plant standards of operation. The results supported earlier work by Herzberg and Schwarz.

41. Herzberg, F. The motivation to work among Finnish supervisors. *Personnel Psychology*, 1965, **18**, 393–402. An overview of the motivator-hygiene theory was presented. The results of a cross-cultural study, conducted in Finland, of 139 lower-level industrial supervisors supported the results of Herzberg's original research.

42. Herzberg, F. *Work and the nature of man.* Cleveland, Ohio: World Publishing, 1966. The author's motivator-hygiene theory and the supporting research upon which it is based was discussed.

43. Herzberg, F. One more time: How do you motivate employees? *Harvard Business Review*, 1968, **46**(1), 53–62. In this paper the motivation of employees was discussed and the fallacies of several popular motivational techniques were examined. The author then discussed his motivator-hygiene theory and its relationship to job enrichment. A 10-step program for the implementation of job enrichment was outlined.

44. Herzberg, F. The wise old Turk. *Harvard Business Review*, 1974, **52**(5), 70–80. In this article the following four different approaches to organizational change were outlined and discussed: orthodox job enrichment, sociotechnical systems, participative management, and industrial democracy. These approaches were put into perspective in regard to organizational development in general. Although orthodox job enrichment was advocated as the method of choice for improving employee satisfaction and productivity, the article appears to represent a partial shift in perspective from Herzberg toward a position of greater flexibility in his approach to organizational change.

45. Herzberg, F., Mausner, B., & Snyderman, B.B. *The motivation to work.* New York: Wiley, 1959. This is the research from which Herzberg's two-factor theory of job satisfaction was derived and the basis for further research and implementation of job-enrichment programs. A detailed description of the methodology used, results found, and the conclusions drawn from a study of managerial and professional personnel and their job attitudes was presented.

46. Hines, G.H. Cross-cultural differences in two-factor motivation theory. *Journal of Applied Psychology,* 1973, 58, 375–377. Herzberg's two-factor theory of motivation was tested in New Zealand using the ratings of 12 job factors and an overall job satisfaction rating obtained from 218 middle managers and 196 salaried employees. Supervision and interpersonal relationships were ranked high by personnel who were satisfied with their jobs, and strong agreement existed between satisfied managers and salaried employees concerning the relative importance of job factors. Findings were interpreted with respect to New Zealand social and employment conditions.

47. Hinton, B.L. An empirical investigation of the Herzberg methodology and two-factor theory. *Organizational Behavior and Human Performance,* 1968, 3, 286–309. This study empirically tested Herzberg's methodology and two-factor theory. Two methodologies were used for data collection. The first was a replication of Herzberg's protocol content analysis (critical-incident technique); the second was a rank-ordering of 14 Herzberg factors. The same subjects were used when satisfaction was assessed using these two different methods, and the measures were taken 6 weeks apart. Results failed to support either the Herzberg methodology or the two-factor theory. Greater differences were found between motivator/motivator and hygiene/hygiene sequence comparisons than between motivator/hygiene comparisons.

48. House, R.J., & Wigdor, L.A. Herzberg's dual-factor theory of job satisfaction and motivation: A review of the evidence and a criticism. *Personnel Psychology,* 1967, **20**, 369–389. Three major criticisms of the theory were presented: 1) it is methodologically bound, 2) it is based on faulty research, and 3) it is inconsistent with past evidence concerning satisfaction and motivation. Each criticism was reviewed in detail and a summary of past research using methods other than Herzberg's was presented. Four conclusions were drawn from this review: (1) a given factor can cause job satisfaction for one person and job dissatisfaction for another and vice versa; (2) a given factor can cause job satisfaction and dissatisfaction in the same sample; (3) intrinsic job factors are important to both satisfying and dissatisfying job events; and (4) the two-factor theory is an oversimplification of job satisfaction-dissatisfaction.

49. Hulin, C.L., & Blood, M.R. Job enlargement, individual differences, and worker responses. *Psychological Bulletin,* 1968, **69**, 41–55. A review of the literature on job enlargement and the relationship of job size to job satisfaction and behavior was presented. It was concluded that the relationship between job size and job satisfaction cannot be assumed to be general but is dependent on the backgrounds of the workers sampled. The authors proposed that the hypothesized relationships between repetition and monotony, monotony and satisfaction, and satisfaction and behavior are questionable. A model was presented that relates job size to satisfaction dependent upon the alienation of the workers from middle-class norms. The model attempted to account for most of the contradictions found in the literature.

50. Hulin, C.L., & Smith, P.A. An empirical investigation of two implications of the two-factor theory of job satisfaction. *Journal of Applied Psychology,* 1967, **51**, 396–402. Two implications of Herzberg's theory were tested using data from 670 office employees, supervisors, and executives. The results did not support the predictions of the two-factor theory. Furthermore, the traditional theory of job satisfaction (that any variable in the job can be both a satisfier and a dissatisfier and that if the presence of a variable tends to make a job desirable, then the absence of that variable makes a job undesirable) was supported.

51. Hinrichs, J.R., & Mischkind, L.A. Empirical and theoretical limitations of the two-factor hypothesis of job satisfaction. *Journal of Applied Psychology,* 1967, **51**, 191–200. The most important reasons for current job satisfaction for 613 technicians were compared for high- and low-satisfaction within the context of Herzberg's theory. An alternative hypothesis was also proposed to the effect that motivators are the prime influencers of satisfaction while hygiene factors serve to limit complete satisfaction for satisfied personnel and complete dissatisfaction for dissatisfied personnel. The results

did not significantly support either Herzberg's theory or the alternate hypothesis, although the latter was given greater support. It was concluded that the growing amount of conflicting research results and the inability of the two-factor theory to handle deviant cases calls for a new look at the motivator-hygiene theory. A new construct was presented in terms of Rotter's social learning theory.

52. Kaplan, H.R., Tausky, C., & Bolaria, B.S. Job enrichment, *Personnel Journal*, 1969, 48, 791–798. This paper summarized Maslow's motivation theory and the role it played in the development of Herzberg's motivator-hygiene theory and job enrichment. A survey of research on Herzberg's theory was presented and it was concluded that the general usefulness of job-enrichment programs which emphasize motivators and ignore hygiene factors is questionable.

53. King, A.S. Expectation effects in organizational change. *Administrative Science Quarterly*, 1974, 19(2), 221–230. This study investigated the effects of managers' expectations for higher production after implementing a job-enlargement or job-rotation program on the actual production rate. Managers at two plants were given artificial reports about the improvement in production after job-enlargement or job-rotation programs were implemented while managers at two other plants were told that the programs were aimed at improving relations with the employees. All four plants were owned by the same company. Results indicated that managers' expectations are more important sources of variation than the innovation itself. Implications were discussed.

54. King, N. Clarification and evaluation of the two-factor theory of job satisfaction. *Psychological Bulletin*, 1970, 74, 18–31. In this article five distinct versions of the two-factor theory which have been stated or implied by various researchers were identified and evaluated. It was concluded that two were invalid because they were not supported by empirical studies. Another version was considered invalid because its empirical evidence was biased by the researchers' coding. The remaining versions of the theory appeared to be of dubious validity because they have been tested in studies where defensive biases inherent in certain self-report methods of measurement have not been eliminated.

55. Latham, G.P., & Kinne, S.B., III. Improving job performance through training in goal setting. *Journal of Applied Psychology*, 1974, 59, 187–191. The study examined the effects of a 1-day training program in goal-setting on the job performance of pulpwood workers. Twenty pulpwood-logging operations were matched and randomly assigned to a goal-setting training program or to a control group which received no training. Over a period of 12 weeks, measures were obtained on production, turnover, absenteeism, and injuries. The results of analysis of variance indicated that goal-setting can lead to increased production and decreased absenteeism.

56. Latham, G.P., & Yukl, G.A. Assigned versus participative goal setting with educated and uneducated woods workers. *Journal of Applied Psychology*, 1975, 60, 299–302. A field experiment was conducted to investigate the effects of participative and assigned goal-setting. Twenty-four educationally deprived logging crews (primarily black with a mean education level of 7.2 years) and 24 educated woods crews (all white with a mean educational level of 12.9 years) were randomly assigned to one of three goal-setting conditions. The conditions were: (1) participative goal-setting, (2) assigned goal-setting, and (3) a generalized "do-your-best" goal-setting condition. The experiment was conducted separately for the two sets of crews. Results indicated that for the uneducated people, the participative condition resulted in higher productivity than did the other two conditions. Goal difficulty and goal attainment were significantly higher in the participative condition. No significant differences among the conditions were found for the educated crews.

57. Latham, G.P., & Yukl, G.A. Effects of assigned and participative goal setting on performance and job satisfaction. *Journal of Applied Psychology*, 1976, 61, 166–171. This study investigated the relative effectiveness of participative and assigned goal-setting on productivity and job satisfaction with different types of workers and tasks. Individual differences in education, time in present job, self-esteem, need for independence, internal-external control, and need for achievement were measured to see if they acted as moderator variables of the participation-performance relationship. Forty-five female typists employed in 10 word-processing centers in a large corporate setting were randomly assigned to two experimental groups defined in terms of participative and assigned goal-setting conditions. One isolated group of typists served as a control group. During the first 5-week period, an improvement in productivity did not occur; however, during the second 5-week

period, productivity improved significantly. There were no significant differences between conditions with respect to goal difficulty or frequency of goal attainment, and job satisfaction declined slightly in both goal-setting conditions. The individual trial measures did not moderate the effects of either type of goal-setting.

58. Lawler, E.E., III. Job design and employee motivation. *Personnel Psychology*, 1969, 22, 426–435. In this article, work motivation was reviewed from an expectancy-theory perspective. Intrinsic and extrinsic rewards were discussed, with emphasis placed on intrinsic reward. Three job characteristics thought to be critical contributors to intrinsic motivation were suggested: (1) meaningful feedback, (2) use of valued abilities, and (3) self-control over goal-setting and attainment. It was recommended that job redesign include both horizontal and vertical change in order to become an effective source of intrinsic motivation. Also, based on a review of relevant research literature, it was concluded that job enlargement is more likely to result in higher work quality than in higher productivity.

59. Lawler, E.E., III, Hackman, J.R., & Kaufman, S. Effects of job redesign: A field experiment. *Journal of Applied Social Psychology*, 1973, 3, 49–62. This job-enrichment study was conducted with 60 directory assistance telephone operators. The job changes implemented were designed to increase the amount of variety and the decision-making autonomy of the operator's job. Job attitudes were measured by questionnaire before and after the job changes were implemented. Results indicated no change in worker motivation, job involvement, or growth-need satisfaction. However, there was a significant negative impact on interpersonal relationships. After the changes, the older operators reported less satisfaction with their interpersonal relationships, and those supervisors whose jobs were affected by the changes reported less job security and reduced interpersonal satisfaction.

60. Lawler, E.E., III, & Hall, D.T. Relationship of job characteristics to job involvement, satisfaction, and intrinsic motivation. *Journal of Applied Psychology*, 1970, 54, 305–312. A total of 291 research and development scientists completed a questionnaire which measured job attitudes, job factors, and job behavior. Factor analysis results indicated that attitudes toward job involvement, higher-order-need satisfaction, and intrinsic motivation should be thought of as separate and distinct. These factors were found to be related differently to job-design factors and to job behavior. Satisfaction was related to such job characteristics as the amount of control over the job and the degree to which it is related to the worker's valued abilities. Satisfaction was not related to either self-rated effort or performance. Job involvement and satisfaction were significantly related to certain job characteristics; however, unlike satisfaction, involvement was related to self-rated effort. Intrinsic motivation was strongly related to the job characteristics measured but was more strongly related to both effort and performance than was either satisfaction or involvement.

61. Levine, E.L., & Weitz, J. Job satisfaction among graduate students: Intrinsic versus extrinsic variables. *Journal of Applied Psychology*, 1968, 52, 263–271. A total of 112 graduate students were surveyed for a test of Herzberg's two-factor theory of job satisfaction and an alternative theory which hypothesized that intrinsic variables should relate more strongly to overall satisfaction than extrinsic variables regardless of the level of overall satisfaction. Based on factor analysis results, the authors suggested that an intrinsic-extrinsic dichotomy is not empirically useful. Neither theory was supported, and it was concluded that both the Herzberg position and the alternative hypothesis were oversimplifications.

62. Locke, E.A. The relationship of intentions to level of performance. *Journal of Applied Psychology*, 1966, 50, 60–66. The way in which intentions affect level of performance was studied in three laboratory experiments. The experiments examined the relationship between intended level of achievement and actual level of performance. Results of all three experiments showed a significant linear relationship; the higher the level of intention, the higher the level of performance. The results held both between- and within-subjects and across different tasks; implications were discussed.

63. Locke, E.A. Toward a theory of task motivation and incentives. *Organizational Behavior and Human Performance*, 1968, 3, 157–189. This article summarized research concerned with the relationship between conscious goals and task performance. The results of research were shown which demonstrated that: (1) hard goals produce a higher level of performance than easy goals, (2) specific hard goals produce higher levels of performance than do-your-best goals, and (3) behavioral intentions

regulate choice behavior. In addition, it was suggested that goals and intentions are mediators of the effects of incentives on task performance. Evidence of the effects was presented supporting the view that monetary incentives, time limits, and knowledge of results do not affect performance independent of an individual's goals. A theoretical analysis supported the same view with respect to participation, competition, praise and reproof. It was concluded that a theory of task motivation must account for an individual's goals. The applied implications of the theory were discussed.

64. Locke, E.A. Job satisfaction and job performance: A theoretical analysis. *Organizational Behavior and Human Performance,* 1970, 5, 484–500. This article presented a theoretical rationale for understanding the relationship between job satisfaction and job performance. It was argued that job satisfaction and dissatisfaction are properly conceived of as outcomes of action. The effect of performance entails or leads to the attainment of the individual's important job values. It was acknowledged that emotions such as satisfaction and dissatisfaction are important incentives to action in that they entail action tendencies (i.e., approach and avoidance). Emotions, however, were not seen as determinants of action. It was argued that performance is the direct result of an individual's specific task or work goals and these goals are, in turn, determined by the individual's values, knowledge, and beliefs in the context of the situation as he understands it.

65. Locke, E.A., Cartledge, N., & Knerr, C.S. Studies of the relationship between satisfaction, goal-setting, and performance. *Organizational Behavior and Human Performance,* 1970, **5**, 135–158. This article was concerned with how evaluations and emotions lead to goal-setting. It was argued that being dissatisfied with one's past performance generates the desire (goal) to change one's present performance. Satisfaction with one's past performance generates the desire (goal) to repeat or maintain the previous performance level. Five studies were reported in which: (a) satisfaction was predicted from value judgments, (b) goal-setting was predicted from satisfaction, and (c) performance was predicted from goals. In most cases the correlations were high and/or significant. However, in some cases, the level of performance which produced satisfaction in the past was not necessarily that which produced it in the future; in these cases, anticipated goal-setting was a better predictor. The relationship between this theory and other theories was discussed.

66. Locke, E.A., Cartledge, N., & Koeppel, J. Motivational effects of knowledge of results: A goal-setting phenomenon? *Psychological Bulletin,* 1968, **70**, 474–485. It was hypothesized that the motivational effects of knowledge of results (KR) were a function of the goals one sets in response. Previous studies were classified into four categories based primarily on the degree to which KR and goal-setting were separated, as follows: (1) The two variables were explicitly confounded by assignment of different goals to KR and No-KR subjects. (2) KR was given only in relation to standards, or subjects were given a record of their previous performance. (3) The goals set by the KR and No-KR groups were not intentionally manipulated, nor were spontaneously set goals measured. (4) The KR and goal-setting effects were separated and found to have a significant relationship between goals and performance, but no effect on KR as such. Other studies which gave multiple KR found performance improvement restricted to the parameter on which a subject set a goal.

67. Macarov, D. Work patterns and satisfactions in an Israeli Kibbutz: A test of the Herzberg hypothesis. *Personnel Psychology,* 1972, **25**, 483–493. This study tested Herzberg's two-factor theory in a work environment that involved no salary – a kibbutz. Kibbutz members (219 persons) were asked 16 questions about their background and present situation and 52 forced-choice questions concerning their work, the kibbutz, work as such, and other attitudes. Also, five open-ended questions about what causes satisfaction and dissatisfaction were asked. The factors related to satisfaction with the work itself, achievement, interpersonal relationships, and responsibility. Working conditions resulted in more dissatisfaction than satisfaction. It was concluded that factors other than salary can serve as effective work motivators.

68. Maher, J.R. (Ed.). *New perspectives in job enrichment.* New York: Van Nostrand Reinhold, 1971. A number of issues related to job enrichment were discussed. Several successful job-enrichment methodologies were presented.

69. Malinovsky, M.R., & Barry, J.R. Determinants of work attitudes. *Journal of Applied Psycholog* 1965, **49**, 446–451. This study examined the job attitudes of 117 blue-collar workers using the Work

Attitude Survey. Results indicated that the attitudes of the workers could be separated into two sets of variables similar to Herzberg's motivators and hygienes, however, in contrast to Herzberg's theory, both sets of variables were found to be positively related to job satisfaction.

70. Manley, T.R. An Air Force supervisor's guide to job enrichment. Air Force Institute of Technology, Wright-Patterson AFB, Ohio. Unpublished manuscript, 1974. This guide was written for Air Force managers. It introduced job enrichment (based on Herzberg's theory), indicated situations where it might be applied, and presented some general outlines to guide the supervisor in implementing a job enrichment program. A suggested reading list was included.

71. Myers, M.S. Who are your motivated workers? *Harvard Business Review*, 1964, 42(1), 73–88. This article reported on the results of a 6-year investigation of job satisfaction at Texas Instruments Incorporated. A review of the motivators and dissatisfiers for different employee groups (scientists, engineers, manufacturing supervisors, hourly technicians, and female assemblers) was presented. A discussion on application to the working environment was also presented. This paper was primarily intended for use by managers rather than research personnel.

72. Myers, M.S. *Every employee a manager.* New York: McGraw-Hill, 1970, 55–95. Theories of human effectiveness were used to provide background information for understanding the concept of job enrichment. Many examples of job enrichment were presented and the changing roles of managers and the employees under a job-enrichment program were discussed.

73. Patchen, M. *Participation, achievement, and involvement on the job.* Englewood Cliffs, New Jersey: Prentice-Hall, 1970. The conditions under which people are highly motivated for achievement on the job and the time at which they develop a sense of identification with the work organization were the subjects of this research. Data were gathered from personnel in several different occupational groups at five Tennessee Valley Authority (TVA) units.

74. Paul, W.J., & Robertson, K.B. *Job enrichment and employee motivation.* London: Gower Press, 1970. The Herzberg-based theoretical framework for job enrichment and the characteristics of an enriched job were discussed. A series of studies conducted at a British firm, Imperial Chemical Industries, was reviewed in detail. The goals and structure of the studies, in general, were presented, followed by a detailed description of the following occupational groups: sales representatives, design engineers, experimental officers, draftsmen, production and engineering foremen. Related shopfloor studies, conducted at Imperial Metal Industries, involved the following types of personnel: toolsetters, process operators, and fitters and operatives. The general applicability of the findings, the feasibility of making job changes, and the consequences of job enrichment were discussed.

75. Paul, W.J., Robertson, K.B., & Herzberg, F. Job enrichment pays off. *Harvard Business Review*, 1969, 47(2), 61–78. Part one of this article reported on five job-enrichment programs at British companies. In this section, the nature of the changes introduced and longitudinal productivity data were described. In part two, the main conclusions of the five studies were presented and the generality of findings, feasibility of change, and expected consequences were discussed.

76. Pelissier, R.F. Successful experience with job design. *Personnel Administration*, 1965, 28(2), 12–16. Job-enlargement and job-purification interventions were applied in three Federal agencies to improve production. It was concluded that job enlargement and job purification may be useful when a highly specialized job hinders the recruitment or advancement of college graduates. These techniques may also aid in selection for promotion, and perhaps improve service to the public.

77. Powell, R.M., & Schlacter, J.L. Participative management a panacea? *Academy of Management Journal*, 1971, 14, 165–173. This study investigated the influence of participative management on worker morale and productivity. Results indicated a low positive relationship between increased worker participation and productivity.

78. Powers, J.E. Job enrichment: How one company overcame the obstacles. *Personnel*, 1972, 49(3), 18–22. This report described a job-enrichment program established at a new CRYOVAC operation and cited evidence of an increase in productivity.

79. Reif, W.E., & Luthans, F. Does job enrichment really pay off? *California Management Review, 1972,* XV(1), 30–37. In this article a critical review of job enrichment was presented with the intent of bringing job enrichment into perspective. It was concluded that a substantial number of workers are not necessarily alienated from work but are, instead, alienated from middle-class values. Thus, for some workers, job enrichment is not the method of choice for increasing work motivation. In fact, it can even have a deleterious impact upon motivation by, for example, interrupting existing opportunities for social interaction. In addition, job enrichment may have a negative impact on some workers and result in feelings of inadequacy or fear of failure. The authors recommended that job enrichment be used selectively; it can be used as an effective job-redesign intervention only with a certain segment of the work force.

80. Ronan, W.W., Latham, G.P., & Kinne, S.B., III. Effects of goal setting and supervision on worker behavior in an industrial situation. *Journal of Applied Psychology*, 1973, 58, 302–307. The effects of goal-setting by supervisors were investigated. A questionnaire was administered to 292 pulpwood producers that related their supervisory practices, attitudes toward employees, and various demographic variables to four criteria: production, turnover, absenteeism, and injuries. Factor analysis indicated that goal-setting is correlated with high productivity and a low number of injuries only when accompanied by supervision. Goal-setting without immediate supervision was related to employee turnover. Supervision without goal-setting did not correlate with any performance criterion. No relationship was found between goal-setting/supervision and absenteeism.

81. Saleh, S.D. A study of attitude change in the preretirement period. *Journal of Applied Psychology*, 1964, 48, 310–312. Two hypotheses, derived from Herzberg's motivator-hygiene theory, were tested using a pre-retiree sample (age 60 to 65 years) of managers. The specific hypotheses tested were: (1) Pre-retirees looking backward in their careers will indicate motivators as the factors that give most satisfaction and the hygienes as the ones that determine dissatisfaction and (2) Pre-retirees looking forward to the time left before retirement will indicate the hygienes as the important factors for job satisfaction. The results supported both hypotheses. A discussion cited possible explanations for why the second hypothesis was supported.

82. Schappe, R.H. Twenty-two arguments against job enrichment. *Personnel Journal,* 1974, 53, 116–123. This article listed and discussed 22 common arguments offered by management and labor against job enrichment. An attempt was made to put these arguments in perspective and suggestions for overcoming obstacles were presented.

83. Schwartz, M.M., Jenusaitis, E., & Stark, H. Motivational factors among supervisors in the utility industry. *Personnel Psychology*, 1963, 16, 45–53. Each subject (public utility supervisors) was asked to describe a job situation in which he felt good about his job, and one in which he felt bad about it. The results indicated that good experiences were related to the job itself and that bad experiences were related to factors in the work environment. No variation was found in terms of the subjects' age, job classification, education, personality characteristics, etc. This study supported the earlier findings by Herzberg, but it was concluded that a simpler methodology could be used and that less detailed factor descriptions may be preferable.

84. Siegel, A.L., & Ruh, R.A. Job involvement, participation in decision making, personal background, and job behavior. *Organizational Behavior and Human Performance*, 1973, 9, 318--327. This study investigated the relationships of job involvement with participation in decision making, personal background, and job behavior as well as the moderating effects of personal background on the relationship between participation in decision making and job involvement. A questionnaire was responded to by 2628 employees in six manufacturing firms. The sample was 51% male and 49% female. Results indicated that job involvement was significantly correlated with participation in decision making, community size, and turnover. However, job involvement was not significantly related to performance, absenteeism, and education. The correlation between participation in decision making and job involvement was significantly greater for people with more education than for people with less (mean educational level was 12 years). The relationship between decision making and job involvement was greater for the more urban individuals.

85. Sirota, D. Job enrichment – Is it for real? *S.A.M. Advanced Management Journal,* 1973, 38(2), 22–27. This article discussed the meaning of job enrichment and cited case histories of job-enrichment interventions in industry. It was stressed that job enrichment is not a panacea, but it

was credited as being an effective method for dealing with the problem of some dissatisfied and underutilized workers.

86. Sirota, D., & Wolfson, A.D. Job enrichment: Surmounting the obstacles. *Personnel,* 1972, **49**(4), 8–19. (a) This article was one of two articles dealing with job enrichment. In this paper, methods for avoiding or overcoming obstacles to the implementation of a job-enrichment program were discussed. Suggestions included improved diagnosis, top management exposure, training programs, and improved job-enrichment implementation. Four case histories of job-enrichment programs at one company were cited.

87. Sirota, D., & Wolfson, A.D. Job Enrichment: What are the obstacles? *Personnel*, 1972, **49**(3), 8–17. (b) In this article several barriers frequently encountered in the implementation of a job-enrichment program were discussed. The authors first described the humanistic and pragmatic considerations which have served to foster an interest in job enrichment. The underutilization of workers was then discussed as were various factors which inhibit effective implementation of job enrichment. Suggestions were provided to improve implementation.

88. Sorcher, M., & Meyer, H.H. Motivating factory employees. *Personnel*, 1968, **45**(1), 22–28. This study at several General Electric plants tried to identify job-related factors that had significant influence on worker motivation and quality of work output. Results indicated that factors associated with poor-quality workmanship were also associated with lower levels of motivation. The factors cited were the following: (1) minimal job training, (2) lack of clearly defined goals, (3) lack of performance feedback, (4) messy work areas, (5) social facilitation or social distraction, and (6) repetitiveness of work. The following recommendations were made to improve quality and morale: (1) provide more than minimal training, (2) create subgoals to measure accomplishment, (3) provide feedback on a regular and frequent basis, (4) maintain a neat and orderly work area, (5) arrange work stations so that conversation between employees is either easy or impossible, (6) increase the number of operations performed, (7) structure jobs so that employees can move about the work area, and (8) explore ways to assign greater personal responsibility to the individual.

89. Steers, R.M., & Porter, L.W. The role of task-goal attributes in employee performance. *Psychological Bulletin,* 1974, **81**, 434–452. This study investigated how six attributed obtained by factor analysis are related to the successful operation of formalized goal-setting programs in organizations. The six task-goal attributes of interest were: (1) goal specificity, (2) participation in goal setting, (3) feedback, (4) peer competition, (5) goal difficulty, and (6) goal acceptance. Goal specificity and goal acceptance were found most consistently related to performance. The results were discussed within a motivational framework. It was argued that performance under goal-setting conditions is a function of at least the three following variables: (1) the nature of the task, (2) additional situational-environmental factors, and (3) individual differences.

90. Umstot, D.D., Bell, C.H., & Mitchell, T.R. Effects of job enrichment and task goals on satisfaction and productivity: Implications for job design. *Journal of Applied Psychology*, 1976, **61**, 379–394. This report summarizes the dissertation research conducted by Umstot in which job enrichment was combined with goal-setting to increase, respectively, satisfaction and productivity. Research was conducted in a setting which combined the realism of a field experiment with the control of a laboratory. The study exemplifies recent advances in theory and research.

91. U.S. Department of Health, Education, and Welfare. *Work in America.* Cambridge, MA: MIT Press, 1973. A general overview of working conditions and worker characteristics in America was presented. Amont other topics, this report dealt with work motivation, job satisfaction, and job redesign. An assessment was provided of the impact of education on the job market and the impact of changing societal trends involving, for example, the employment of women, racial minorities, and elderly persons. In addition, the financial costs of employment and welfare relief were investigated. This report included a listing of 34 job-redesign interventions with brief descriptions of each.

92. Vroom, V.H. *Work and Motivation.* New York: Wiley, 1964. A general discussion of motivation was presented followed by an examination of why people work. The method of choosing an occupation was also discussed. A detailed examination of what determines job satisfaction was presented, and the role of motivation in work performance and motivational determinants of effective job performance were presented.

93. Wanous, J.P., & Lawler, E.E., III. Measurement and meaning of job satisfaction. *Journal of Applied Psychology*, 1972, 56, 95–105. Nine different operational definitions of job satisfaction were reviewed. Each definition stated how facet satisfactions combine to determine overall satisfaction. Data were gathered from 208 employees of an eastern telephone company in 13 different jobs. About one-third of the sample was female and in the traffic department; all plant department employees were male. The data were used to determine the relationship between each of the nine definitions and two traditional measures of job satisfaction. The results showed that these definitions do not yield empirically comparable measures of satisfaction. Several correlated better with an overall rating of job satisfaction and with absenteeism than did others. A convergent and discriminant validity matrix analysis suggested that it is possible to validly measure the satisfaction of personnel by focusing on different facets of their jobs. Implications were discussed.

94. Weissenberg, P., & Gruenfeld, L.W. Relationship between job satisfaction and job involvement. *Journal of Applied Psychology*, 1968, 52, 469–473. This study tested the relationship between Herzberg's motivator-hygiene variables and job involvement. Ninety-six male state Civil Service supervisors were surveyed using a job-satisfaction scale developed by Wernimont and a job-involvement scale developed by Lodahl and Kejner. Results indicated that motivator, but not hygiene, satisfaction variables correlated with job involvement. Total motivator satisfaction scores accounted for more variance in overall job satisfaction than did hygiene variables.

95. Wernimont, P.F. Intrinsic and extrinsic factors in job satisfaction. *Journal of Applied Psychology*, 1966, 50, 41–50. This study tested Herzberg's theory that motivators are the primary determiners of job satisfaction and that hygiene factors are the primary cause of job dissatisfaction. A total of 132 subjects responded to forced-choice and free-choice questionnaires about past satisfying and dissatisfying job situations. Results indicated that intrinsic factors (motivators) and extrinsic factors (hygienes) are both sources of satisfaction and dissatisfaction, although the former appear to be stronger determinants of both satisfaction and dissatisfaction.

96. Whitsett, D.A., & Winslow, E.K. An analysis of studies critical of the motivator-hygiene theory. *Personnel Psychology*, 1967, 20, 391–415. A history and review of Herzberg's motivator-hygiene theory was presented and studies critical of the theory were surveyed. It was concluded that due to general methodological weakness and frequent misinterpretation of both study results and theory, the studies as a whole offered little empirical evidence for doubting the validity of the theory.

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